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BIG BAKERY REPORTS

FIFTEEN VEHICLES in the Collins Baking Company's fleet at Columbus, Ga. This fleet uses Insulated Havoline Motor Oil, Texaco Marfak, Texaco Thuban.

INSULATED

HAVOLINE

COMMERCIAL CAR JOURNAL

AUGUST, 1939 VOL. LVII, No. 6

free Books

BOOKLETS
PAMPHLETS
CATALOGS

. . . a special selection made by the editors . . . to get your copy, just check the letter on the post card between pages 108 and 109 which corresponds with the item you desire and mail to Commercial Car Journal, Philadelphia.

Shop Tool Listing

A 15-page shop tool catalog worthy of a place in any fleetman's file has just been released by National Machine & Tool Co. Gear and axle pullers, creepers, valve reseating tools, reamers, a hydraulic brake cylinder hone spring spreaders and a vast array of special purpose tools are just a few of the items included. Better check "A" on the post card for a copy.

Imperial Brass Catalog

Up-to-the-minute data on car and truck replacements are contained in a new 70-page catalog just issued by Imperial Brass Mfg. Co. Included are complete listings on the company's ready made flexible fuel lines. Check "B" on the post card for a copy of this handy reference guide.

Johnson Bronze

A complete listing of Johnson Ledaloyl self-lubricating bearing bronze is contained in Johnson Bronze Co.'s new catalog. Data on all available sizes, prices and some worthwhile hints on proper installation are within its pages. Check "C" on the post card.

Shim Chart

An application chart showing all practical uses of Laminum shims has been compiled by the Laminated Shim Co. Forty-six illustrations show common uses throughout industry. Check "D" on the post card for a copy.

EARS TO THE Ground

Air Attitudes

This department has record of two manufacturers who want to use air to serve their purposes. One has a positive idea and one a negative. For instance one idea is to use air compressed by the engine and led off into tanks from the combustion chamber to operate the brakes. The other is to use an absence of air and with the vacuum from the intake manifold operate a gear shifting device for COE's and other trucks where remote and/or servo shifting would be desirable.

Recorder Record

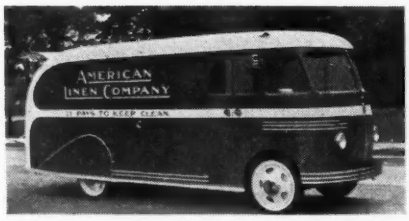
Our agent in charge of elapsed time tells us that a recorder maker is planning on bringing out a unit which will keep record of truck activity for 30 days at a time without attention.

Double Development

A company about to introduce a new brake found that there was no brake lining existant which was suitable for use with that particular type of brake. The brake developers set out to make a suitable lining and in doing so they made a metal lining so good that they now intend to design a new clutch around this lining.

Announcement Addendum

The clarion call of new model passenger car announcements will first be heard early in August and the last notes probably will not die away until the first two weeks of that month have passed.



Clean lines, accessibility and folding entrance doors with flush handles are features of this General Body on White chassis

CCJ QUIZ

Pick a number from one to ten, and if you pick ten numbers correctly you can score yourself a hundred. Robert F. Bahl, of Bendix-Westinghouse Automotive Air Brake Co., picked 'em first and thus hit the $10 jackpot for the second month in a row. Remember it's ten points off for each one you miss.

Correct Answers on Page 106

1. There are four Marx Brothers, three Ritz Brothers, and Five Brothers Chewing Tobacco. Now, how many Dodge Brothers are there of automotive fame?
1 2 3 4 5 6 7 8 9 10

2. How many truck makes are manufactured by the General Motors Corp?
1 2 3 4 5 6 7 8 9 10

3. If your trucks cross state boundaries, you should be able to see the answer to this one a mile away. For how many hundred feet must clearance lights on a truck be visible if they are to conform with I.C.C. regulations?
1 2 3 4 5 6 7 8 9 10

4. In the cycle of a gasoline engine cylinder how many separate strokes are there?
1 2 3 4 5 6 7 8 9 10

5. If that one is too easy, how many strokes are there to the Diesel Cycle?
1 2 3 4 5 6 7 8 9 10

6. Are you geared up to this one? How many gear positions are there on a truck equipped with an Eaton Ruckstell Two-Speed axle?
1 2 3 4 5 6 7 8 9 10

7. How many cylinders would you say were in the majority of truck engines operating today?
1 2 3 4 5 6 7 8 9 10

8. Let's brush up on your generators. How many brushes are there on a 1939 Ford truck generator? (Careful, they made a change last year.)
1 2 3 4 5 6 7 8 9 10

9. How many years after the turn of the century was it when Henry Ford brought out his famous Model T.
1 2 3 4 5 6 7 8 9 10

10. What is the usual number of brake shoes on a brake assembly used with the hydraulic system?
1 2 3 4 5 6 7 8 9 10

The OVER load

Works of the Winners

Pages 19 to 31 inclusive of this issue are devoted to the prize winning papers of the CCJ Contest. The authors have good stories to tell and they tell them well. They come to you as they came to us, free from editorial deletions or changes. It is just simply a case of one fleet operator talking to another. Congratulations to the winners for their work and congratulations to the readers for the treat in store for them.

Tale of a Trailer

Designer Westberg continues his Body of the Month series at its usual fast pace on page 32. Without pausing for the laggards he plunges into trailer body design and emerges with a refrigerated trailer body. Without sacrificing aesthetic appeal Mr. Westberg always shows a body that can be built.

From The Shop Notebook

Shop Hints have their customary place of prominence. This is the shop man's own department. You can use what you see in your own shop and you can earn a fin (that's a five-spot) by looking around your own shop and slipping us an idea which can be used. Fame, and a five await any shop man who has a pencil, paper and an idea.

Episode Four—Diesel Serial

More exciting than a cops and robbers melodrama is the series on diesel engines for those of a mechanical mind. Every article in the series actually tells in detail how to do some specific job on a diesel engine. This month we work on a Cummins. The page is 36.

First-Hand Evidence

When a driver pulls up to your house to deliver a package should he squirm out of a standard panel job as best he can or is it good business to have him step comfortably out of a highly specialized package delivery unit? CCJ consulted the "man who owns one" about 50 times and reports to you as faithfully as possible what it learned. It seems that another type of vehicle has assumed as important a place in the transportation picture as a dump truck or a tanker.

There are other things for reading and reference so take the book home and go over them at your leisure. Meantime here is a note or two that did not fit into the feature pages.

The Old Army Game

In merry old England a truck driver was fined along with his employer for driving a vehicle which smoked badly enough to inconvenience the traffic behind him. The constable who arrested him was permitted to testify that the smoke was caused by worn piston rings and cylinder walls (some cop, eh, boss). An engineer employed by the driver's company testified in defense of the company that it had 500 trucks and drivers, four repair shops and 100 mechanics and they were very jealous of their reputation and certainly no vehicle was permitted out unless it was fit. He further testified that this case was the driver's fault because he did not report any trouble.

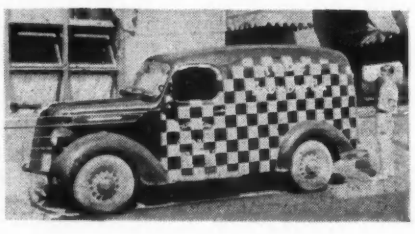
Wish You Were Here

Fifteen drivers of the Geo. F. Alger Co. and the Kirk Transportation Co., Detroit, Mich., will spend two weeks in Florida on a vacation at the boss' expense. They will be the 15 drivers with the best safety records from June 1 to Dec. 31.

It's Rube Goldberg at work on one of those brain twisting inventions perpetrated by Goodrich as one way of keeping tires cool

This impartial trailer houses either nine horses or three horses and an automobile, as well as sleeping quarters for a four-man crew. The tractor: a c.o.e. Chevrolet

"Paint 'em like a checker board," shouted C. P. Edwards of a Charlotte (N. C.) laundry; thus accidentally hit on an attention-getting idea that has been used for 25 years



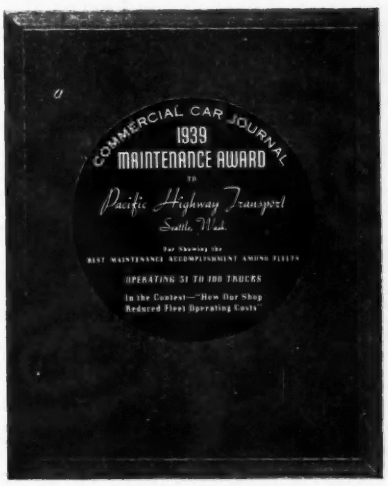
COMMERCIAL CAR JOURNAL would like to extend public congratulations to the winners of the contest. Undoubtedly the winners labored long and hard. In addition they showed a thorough knowledge of their jobs and a willingness to pass on to others the things which they have learned through experience. Evidence of the fact that they know fleet operation and that they were willing to swap experience can be gathered readily by reading the articles, which appear in succeeding pages.

The judges likewise worked hard and long. There were so many entries expressing meritorious ideas, supported by records, that judging was far more than a matter of casual reading. It was necessary to haul out pencils and paper and rate the entries and then proceed with the eliminations as an entirely separate

THE Winners

and an analysis

CCJ CONTEST "How Our Shop Reduced Fleet Operating Costs"



GRAND PRIZE

E. P. MORGAN, Service Manager
Adley Express Company, Inc., New Haven, Conn.

8-25 FLEET CLASS

A. C. SCHONEK
Superintendent Delivery, Penn Traffic Co., Johnstown, Pa.

51-100 FLEET CLASS

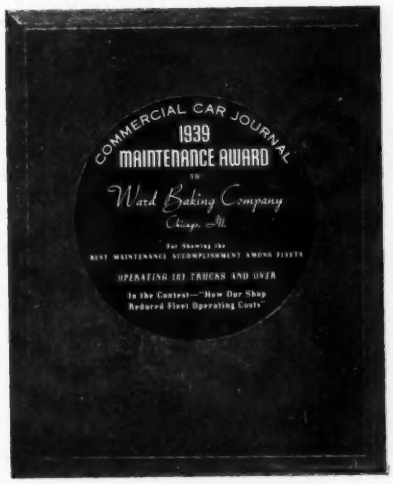
H. W. DRAKE
Superintendent Equipment, Pacific Highway Transport, Seattle, Wash.

26-50 FLEET CLASS

F. R. WARD
Garage Superintendent, Mistletoe Express Service, Oklahoma City, Okla.

101 UP FLEET CLASS

G. E. LARSEN
Garage Superintendent, Ward Baking Company, Chicago, Ill.



process. Even then it was not easy, so keen was the competition.

The ideas of the winners are outlined in their individual contributions. However, there are a number of points made in the other good papers and there is a certain amount of agreement and disagreement among all of the papers which has value and which would be lost unless some analysis of all of the papers was made. To show, then, how runs public fleet opinion the following outline of trends is offered.

The varying and sometimes conflicting points made by the various contestants, usually supported by fig-

(Turn to Page 102, Please)

SELF-S

brings home the fa

Adley Express Co. stopped farming out to sharecroppers and cultivated economy in its own shop with equipment. Records show a bumper crop of low cost transportation

OUR first step toward reduction of operating costs was to provide some means of ascertaining the number of miles our units traveled. Up to 1933, many of our trucks had no speedometers or hubodometers. During that year we installed Veeder hubodometers on all trucks which did not have speedometers. Those having speedometers were checked for accuracy, and the ones out of order, etc., repaired.

We then designed and made up a form sheet, for each driver to fill out, for each truck he used, showing truck number, date, mileage reading at start and finish of trip, gallons of gas and quarts of oil put in truck, load on and off in pounds, and any defects noted by him. We also designed a system of keeping accurate records by individual units of all gas and oil used, all repairs and cost of same, washing and greasing costs, insurance and registration split up into 13 parts, for the four-week period by which we work, overhead apportioned to each unit, etc., and the exact miles each unit traveled each four weeks, and depreciation. This gives us a basis from which to work, in the form of figures showing us the number of miles each unit traveled, gas and oil used, fixed charges, etc., from which we were able to arrive at a very accurate cost figure per mile, for each unit, which was easily transformed

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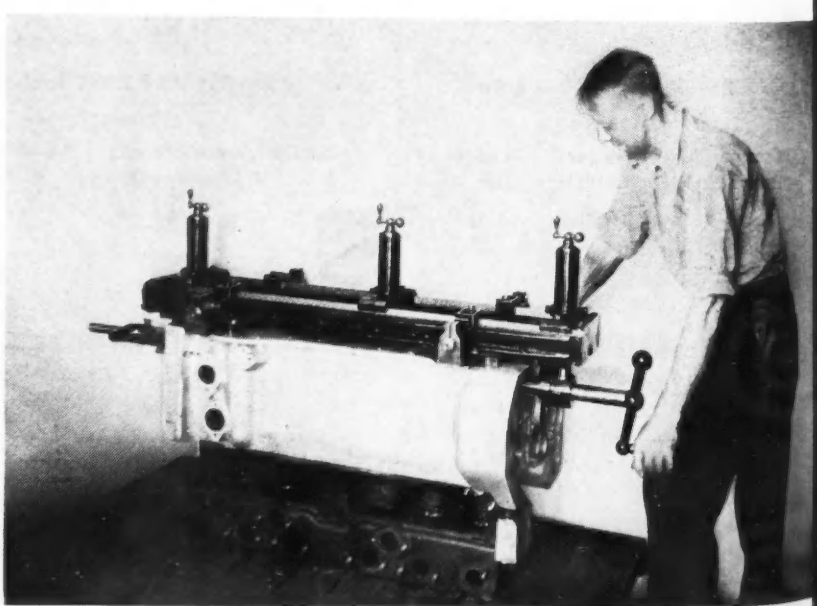
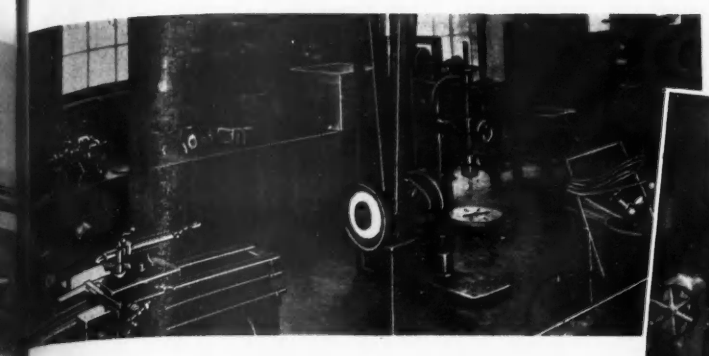
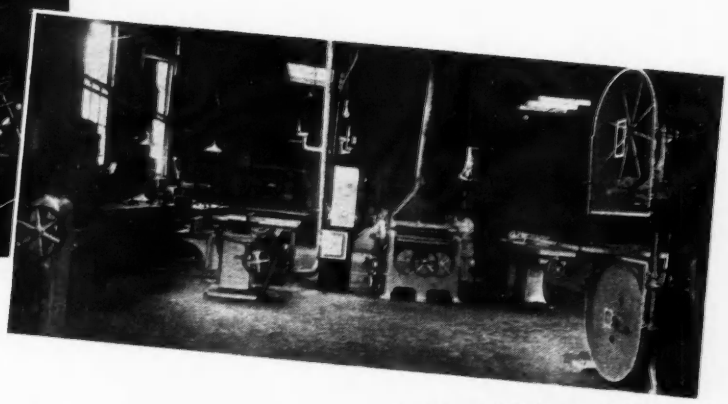


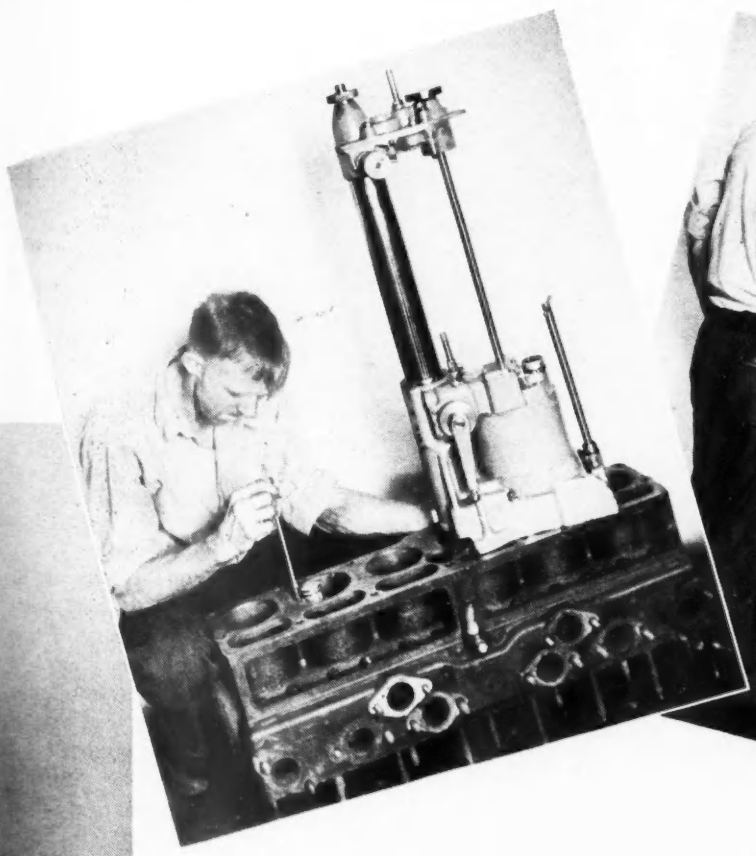




SERVICE

fancy groceries

By E. P. MORGAN
Service Manager, Adley Express Co., Inc., New Haven, Conn.



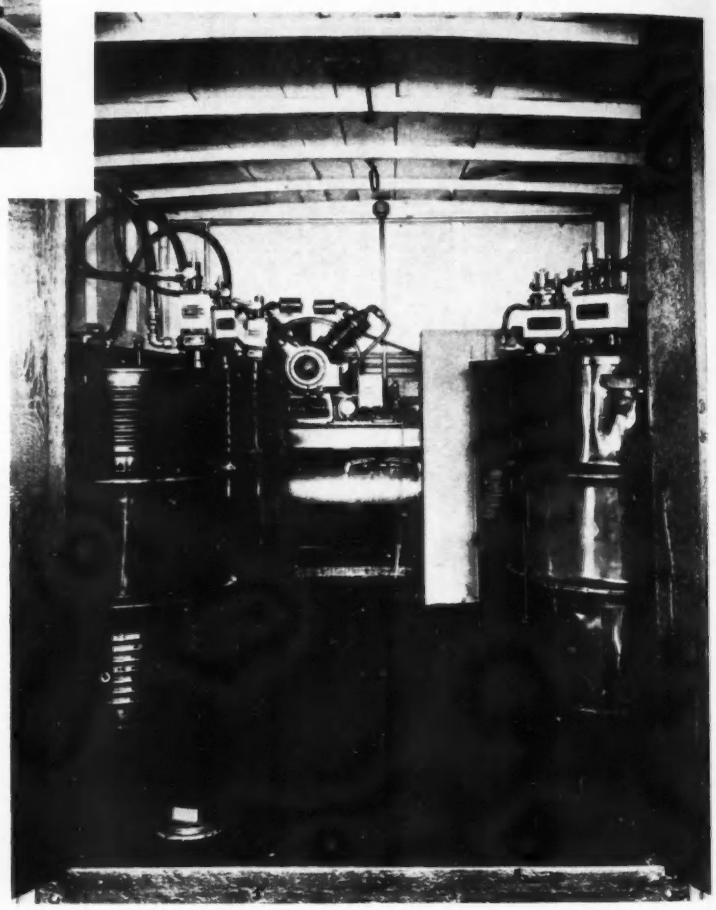
Top left to right: A typical Adley over-the-road unit. Next a view of the machine shop which gives you a rough idea of how Adley believes in doing the job at home. Next is the wood shop where bodies are maintained and a few of them are built.

Opposite page: even main bearings are line-reamed in the Adley shop at a saving. Above left: better and cheaper cylinder reconditioning jobs are done at home. Right: use of a new brake drum lathe has cut cost and extended brake drum and lining life

SELF-SERVICE

brings home the fancy groceries

Left: The lubrication truck looks like any other truck to the casual observer. Below: Interior of lubrication truck showing the high pressure pumps on the drums on the right and low pressure pumps similarly located on the left. Note drain plug in floor which leads to a 100 gal. tank for draining crankcases. Right: Panel behind side doors showing six outlets for lubes and three gages for metering.

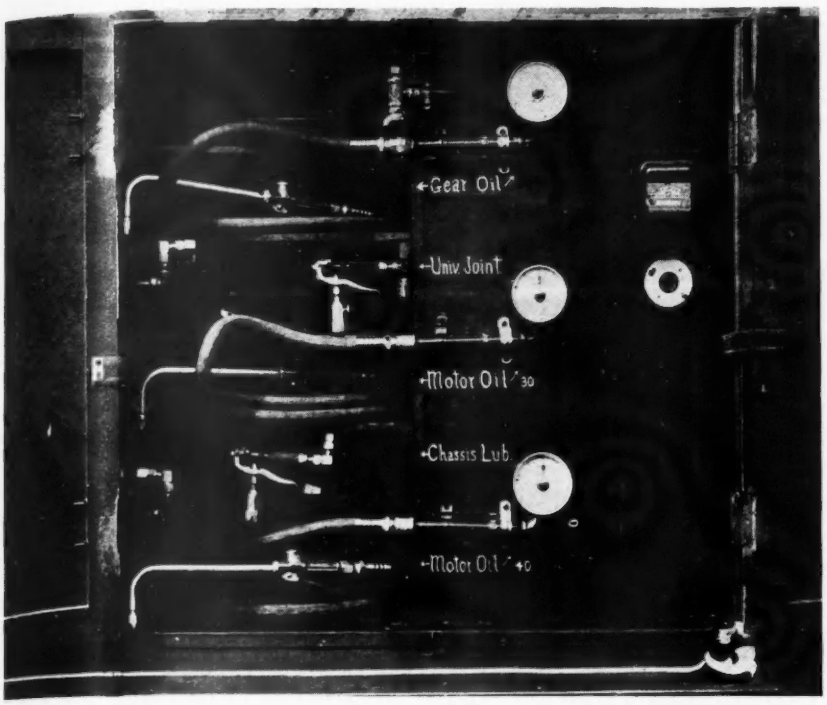


into fleet total figures, at the close of each four-week period. From these mileage cost figures for individual units, we were easily enabled to pick out the inefficient ones, and to find out and remedy the cause of any excessive cost.

We also designed and made up a system of keeping track of tires, first making up a card for each tire. Then we began branding tires with our own brand numbers. The card shows make of tire, size, brand number, serial number, initial cost of tire, initial cost of tube on the heading of the card, the bulk of the card being divided into spaces to show date, mileage reading of truck, truck number, and wheel position tire was installed in, and the spaces to show the same information for removal of tire from truck for any cause, and if tire repairs needed, what they were, and cost of same. We also designed and made up tire change cards, one of which is filled out by person changing any tire. This shows date, truck number, brand number, wheel position of both tires, the one removed, and the one installed. These cards are turned in to the cost department, and the information shown recorded on the cards for each individual tire. Therefore, from these cards we can tell exactly what truck wheel position and mileage any tire has traveled at any time and also exactly how much each tire costs, how many miles it lasts, any repairs, and cost of same, and cost per mile.

Early in this program, we discovered that for various reasons, some of our tires were running underinflated, some over-inflated and we took the necessary steps in our maintenance department to check all tires daily and keep the manufacturers' recommended pressures in all tires. We also check wheel alignment periodically and consistently. From the information obtained from these records, we have made some changes in makes of tires used, tire sizes, tire maintenance, etc., which has brought our average tire mileage up from 32,000 in 1934 to 46,747 in 1938. During 1938 our fleet covered 7,818,386 miles. At the present time we have 958 tires in actual use, on all equipment, not counting any spare tires, this being the number of tires on wheels, and rolling every day.

Our first accurate records of gasoline mileage in 1934 showed that we were obtaining an average of 3.2 miles per gallon for our long distance trucks, which at that time were four-wheel trucks of 32,000 lb. gross weight capacity, and our local delivery trucks of 24,000 lb. gross weight capacity averaged 4.4 miles per gallon. From our truck cost sheets for four-week periods, we concentrated on the trucks showing poorest mile-



age on gas, and went to work on them rebuilding carburetors, in some instances installing carburetors of different make or type which showed better performance and, where necessary, reconditioning motors. We also purchased an exhaust gas analyzer, and a syncroscope for timing the ignition to facilitate motor tune-up work, and to help eliminate the famous so-called "human element" as far as possible in such motor tune-up and adjusting. Since 1934 our fleet has been changed over, so that we have no four-wheel trucks in long distance work at all. Instead we have all tractors and semi-trailers on these runs. Also our local delivery trucks are somewhat larger. Our tractor semi-trailer units are all of 40,000 lb. gross weight capacity, and our local delivery trucks are nearly all of 26,000 lb. gross weight capacity. However, even with this increased capacity of units, we are now obtaining an average of 4.06 miles per gallon on the long distance units, and 5.49 miles per gallon on the local delivery trucks.

Our first records of oil consumption, also in 1934, showed that we were obtaining an average of 72 miles per quart of oil, changing oil each 2000 miles. We tried out three makes of oil filters, of a type which is installed directly on the motors, and the oil forced through them by the motor oil pressure system. After these tests, we adopted the one which proved best and equipped our entire fleet with this make. After using same, and having oil tested at various mileage periods, for condition, we have arrived at a mileage for changing oil which is far in excess of our previous 2000-mile change practice. Also, from our records, we were also able to ascertain just which units were using more oil than others. These were brought in the shop, the motors inspected, and cause of excessive oil consumption remedied. This has resulted in fleet average per quart of oil now being 109 miles and has also resulted in much cleaner motors, inside. These oil filters have a filler which can be changed in about five minutes, and is done at 1500-mile intervals, at a cost, for material and labor of about 50c.

During the past five years we have purchased quite a lot of equipment for motor rebuilding, salvaging worn parts where practical and to enable us to do more repair work in our own shop instead of sending out quite a lot of it for machine work, welding, etc.

We formerly sent out motors for reboring cylinders, alignboring main bearings, boring connecting rod bearings to size, as well as regrinding crankshafts. We still have our crankshafts reground by an outside concern, but we have changed from a local concern, that formerly charged us $39 for regrinding a 13-bearing crankshaft, to a crankshaft manufacturing company that regrinds the same 13-bearing crankshaft for about 25 per cent of our original price, and do a much better job as well. This amounts to a saving to us of approximately $1,400 per year, as we rebuilt about 50 motors annually.

For alignboring main bearings on seven main bearing motors, we formerly paid $28. We purchased what we think is the best make of alignboring fixture for $625, by the use of which we fit and alignbore our main bearings for a labor cost of $3 each, which resulted in a savings of $625 the first year besides paying for the fixture, which appears to be good for a lifetime. Since buying this fixture we have fitted and bored 220 sets of main bearings, resulting in a net saving of $4,775.

Our connecting rod bearings formerly cost us $3 each to have them bored to fit reground crankpins. After purchasing equipment for boring and aligning connecting rods, we found that we could bore and align six rods for a labor cost of $1.25, saving $16.75 per motor. Net savings after deducting cost of equipment, amounting to $3,229 on 220 complete motor rebuilding jobs. This does not include the rods we have bored and aligned for occasional rod replacement work in replacing what few rod bearings are found defective when doing a ring job on a motor. Also it does not include the savings in time which we enjoy, by being able to bore and align one or more connecting rods for any one of our motors in a few minutes' time, rather than having to wait for an outside jobber to get around to do the work for us.

We formerly paid $15 for having a six-cylinder motor block reground, or rebored and honed. We purchased a well-known make of cylinder boring bar and cylinder hone for $425, and found that our labor cost for reconditioning six cylinders was $2.80, saving $12.20 each motor. Since using this equipment we have reconditioned cylinders on 302 six-cylinder jobs, resulting in a net savings of $3,259.40.

Our pistons are all purchased from vehicle manufacturer factory branches, all of these branches carrying in stock pistons in sets to fit any standard or oversize cylinders, oversizes being 1/64 inch, 1/32 inch,

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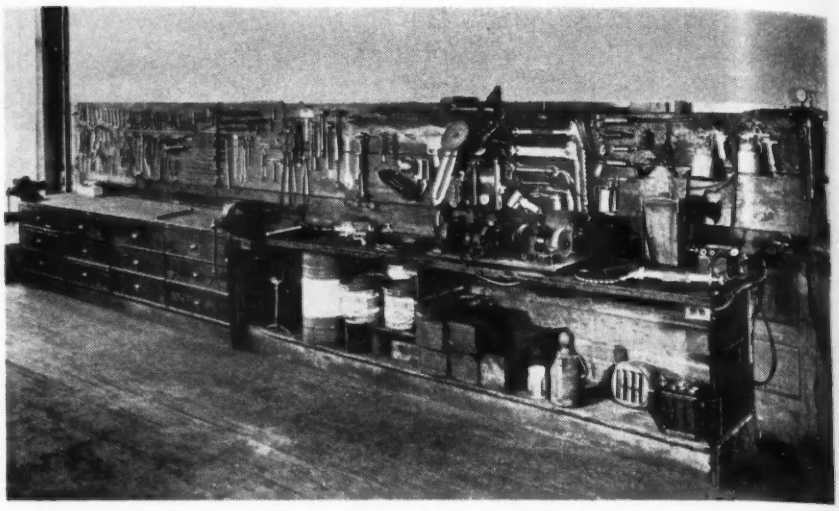


SUPERVISION MAKES

One of the newer Penn Traffic Co. trucks of the modern package delivery type

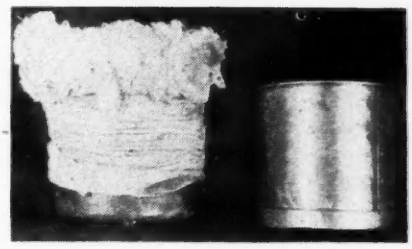
Penn Traffic Co. sells itself on shop equipment, even to small hand tools, and on new ideas of maintenance and records. Now it finds itself a satisfied customer

HAVING charge of a fleet of 22 trucks and two sedans, it fell to my lot as delivery superintendent of the largest department store fleet in the state, outside of the cities of Philadelphia and Pittsburgh, to bring some order of efficiency and cost reduction out of what was then (Feb. 16, 1937) a chaotic and inefficient method of operating a fleet of mixed trucks and vehicles, ranging from 2-ton Internationals, Diamond-T's and Fords, down to ½-ton Chevrolet and Dodges. Surveying my chances, I found that I was very fortunate in having a splendid mechanic as a shop maintenance man. Furthermore the management of Penn Traffic Co. had faith as to ability to achieve success and gave me their full cooperation.

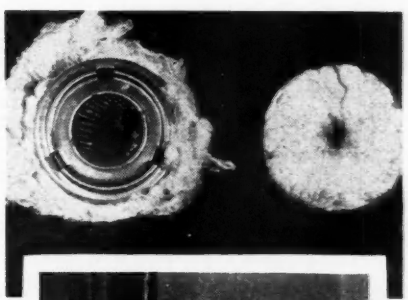
The first thing to be done was to find a better way of keeping our fingers on the costs and this could only be done by keeping proper records of same. We had then a Driver Report Form from which was tabulated to a ledger the recorded mileages, gallons of gasoline consumed, etc. This ledger was maintained by a stenographer in the general superintendent's office and monthly record sheets were made from this and submitted to my office. Since this was merely a vague summary of costs of operation and did not give a true daily record performance, it was discontinued and a ledger was put in operation in my office where I had daily access to it and could study operating costs intelligently.

Next a card report system, with the help of Atlantic Refining Company, was installed in the shop and on the trucks. This is called the 1000 Mile Preventive Maintenance System. Since this system covered about every report of repair needed and a method of checking same by the mechanics and myself, we were soon on a sound footing as regards records and reports needed. I am submitting a sam-

STORE FLEET A *Bargain*



In the usual order are pictures of the shop-owned hand tools in place and a paint job in progress. Then three stages of oil filter cartridge manufacture



By A. C. SHONEK

Superintendent of Delivery . . . . . Penn Traffic Co. . . . . Johnstown, Pa.

ple of forms used. We found that by following this method of checking and after instructions to our shop personnel of mechanic and helper, that we shortly had not only better lubricated trucks but also much cleaner motors and since the system called for cleaning under chassis parts with a wire brush and wiping off surplus grease, the mechanic could now see surplus grease immediately, we found that we were using considerably less grease.

The system we have in use today calls for a steam bath of motors and chassis whenever needed. We did not purchase any high-priced equipment for this job, but merely made a long nozzle of $\frac{3}{8}$-in. copper pipe sheathed in a foot long hose which was attached to our hot water heater. The only addition necessary here was a steam shut-off valve to replace the ordinary water one.

Having solved our lubricating problem we next turned to oil con-

(Turn to Page 88, Please)

COST CURVES

SUCCUMB UNDER MISTLETOE

Mistletoe Express finds that it does not take brilliant ideas to reduce operating costs, but that cleanliness and a well-rounded maintenance program consistently carried out is a technique that woos a saving

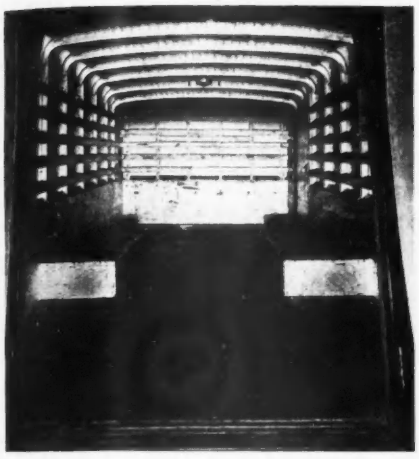
DESPITE the general rise in prices of practically everything that goes into the maintenance of a fleet, we have been able to reduce operating costs a little better than 16 per cent during the period from 1933 to 1938. No single thing can be credited with accomplishing that result. A general tightening up of the entire maintenance department produced the savings.

Close and accurate records of operations costs have been a policy of Mistletoe Express Service since it was started. Study of these records and stopping of the leaks they indicated enabled us to lower our maintenance cost eight mills per mile in the face of rising prices.

In 1933 we serviced out of our Oklahoma City shop 15 ½ and ¾-ton trucks, and 13 larger trucks, 1½ to 4 tons. In 1938, we were servicing 20 ½ and ¾-ton trucks and 14 larger trucks, 1½ to 4 tons. During the last half of 1938, this portion of our fleet rolled up a total mileage of 695,474 miles. At eight mills per mile this means a savings of $5,563.79, or over $11,000 a year.

Increased tire mileage is responsible for a high percentage of our savings. In the last six months of 1933 the 28 trucks serviced out of our Oklahoma City shop traveled 640,957 miles and our tire expense was $3,464.30 or .0054 cents per mile. During the five years from 1933 to 1938 the price of tires advanced approximately 22½ per cent, yet our tire costs for the 34 trucks during the last six months of 1938 were the same, .0054 cents per mile, or $3,751.26 for 695,474 miles. Had we been able to buy tires in 1938 for the same prices we paid in 1933 our costs would have been down to .0041 cents, a saving of 1.3 mills per mile or $904.11 for the six months. This showing was made by lengthening tire mileage which was accomplished by more knowledge and better care of tires.

Five years ago we asked the tire companies to have their engineers make an inspection of our routes,



Across the top you see first a pretty complete view of the Mistletoe storage garage, shop and stockroom. This is quite noteworthy because of its cleanliness; next a man is going over tires to remove stones and foreign objects. This happens after every trip. Then you see an engine tune-up in progress and at this particular stage the mechanic is checking progress with a tachometer. Above: two views of a body designed by Mistletoe

By
F. R. WARD

Garage Superintendent, Mistletoe Express Service, Oklahoma City, Okla.

equipment and tire shop and make such recommendations as they saw fit. They came and made an exhaustive study of all conditions. I was not very enthusiastic on this plan when it was first brought up but after the engineers came I changed my mind. Those people learn things in the laboratory before we find them out on the road, and a trucker who abuses his tires and neglects to follow the tire companies' recommendations is being penny-wise and pound-foolish.

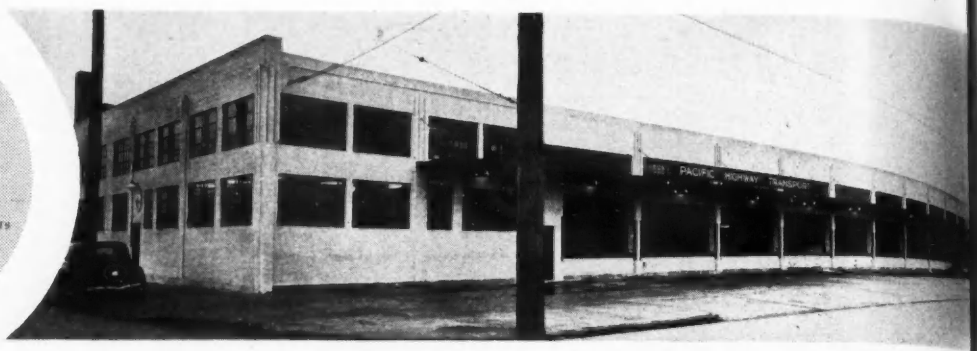
The first thing we did was to stop overloading our tires. We not only stopped overloading but adopted the practice of putting on tires that were capable of carrying (by the manufacturers' rating) 15 per cent greater load than we put on them. In this way our tires have a margin of safety to meet the emergency jolt caused by hitting a rough spot in the road at high speed.

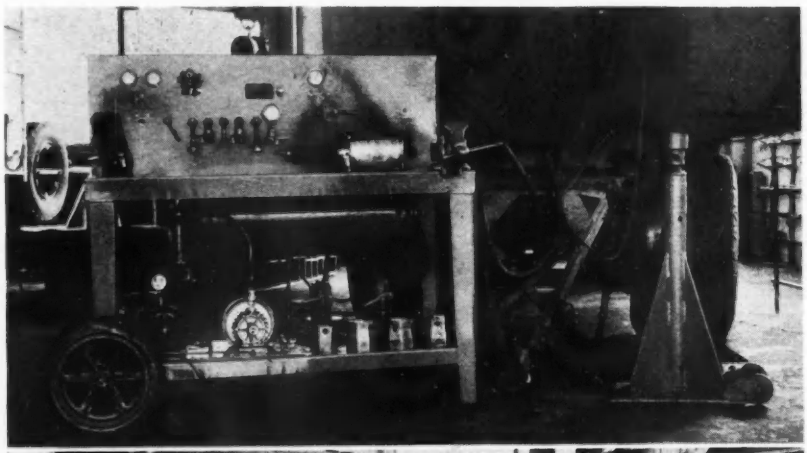
One thing we discovered for ourselves was that the inner tire on duals ran a great deal hotter than the outer tire. This caused a rise in pressure over the outer tire with a consequent greater load and shorter life. Then we found that the rib tread such as we used on the front wheels stayed cooler than traction treads, so we began to use only rib treads on the inner tires of duals. This gave us a considerable increase in mileage. In the summer we inflate the front tires and the outer tires of the duals 5 to 8 pounds more than the inner tires and find that after a few miles on the road the pressures are approximately the same.

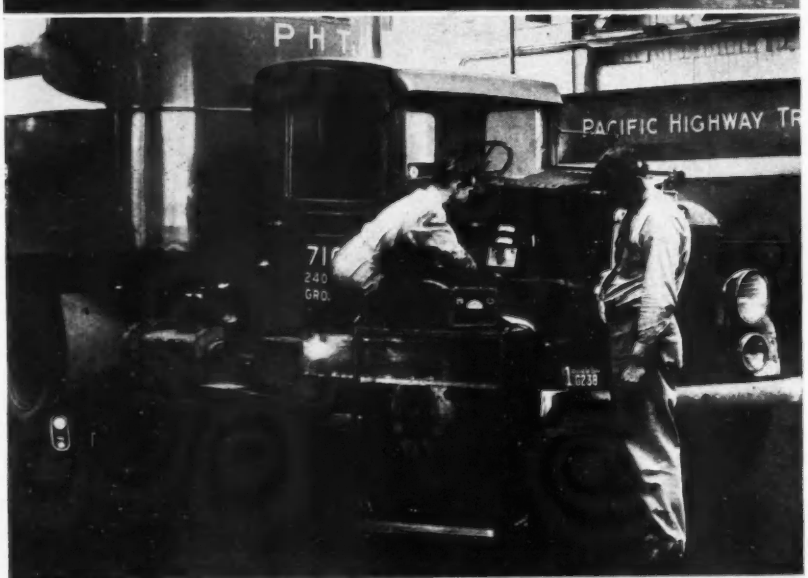
Front tires are switched from one

(Turn to Page 74, Please)

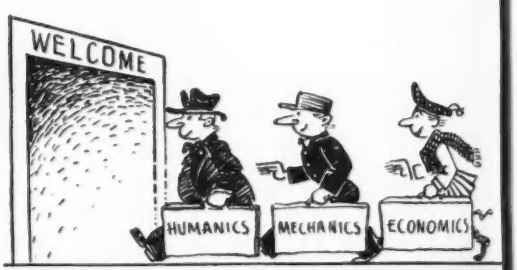
COMMERCIAL CAR JOURNAL
1939
MAINTENANCE AWARD
to
Pacific Highway Transport
Seattle, Wash.
For Showing the
BEST MAINTENANCE ACCOMPLISHMENT AMONG FLEETS
OPERATING 31 TO 100 TRUCKS
In the Contest—"How Our Shop Reduced Fleet Operating Costs"





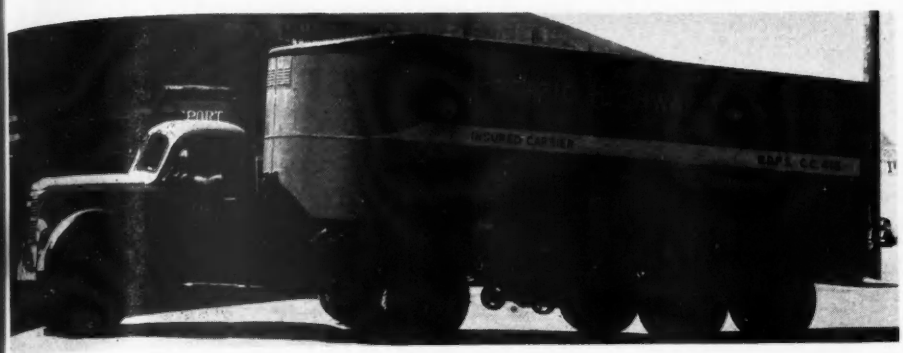


Left, top to bottom: A portable shop-made equipment set for testing trailer brakes without the tractor. Next: a graduate mechanical engineer does the tune-up work with instruments and below precision work on valves. Across the top: Home port for Pacific Highway Transport trucks which houses the shop; one of the typical over-the-road units.



HOUSES HUMANICS,

To meet increased taxes, higher material and labor unit costs and constant if not lower rate for the commodity handled, motor vehicle maintenance supervisors must—if they are to justify their hire—devise ways of producing new minimums in maintenance costs. Unless we, as maintenance supervisors, have accomplished something in this respect we are of little value to our employers, employes, or customers. Furthermore, if our unit costs haven't declined, we must not have employed any of the enormous amount of practical scientific information afforded us through COMMERCIAL CAR JOURNAL and other publications—neither must we have taken advantage of the wealth of up-to-the-minute data available through the Society of Automotive Engineers, automotive manufacturers, and the laboratories of our various colleges.



By HARLEY W. DRAKE

Supervisor of Equipment
Pacific Highway Transport
Seattle, Wash.

Central Shop

MECHANICS AND ECONOMICS

Pacific Highway Transport finds that when a fleet family lives under one roof these three welcome lodgers help the family live more comfortably and at less cost

Our business is that of common carrier, operating between Bellingham, Wash., and Portland, Ore., with branch lines to intermediate points. Practically all routes are paved and those not paved are macadamized. The heaviest traffic originates and/or terminates at Seattle, Olympia, and Portland. The maximum elevation encountered is approximately 1000 ft. Even so, considerable numbers of grades are negotiated because this is certainly no prairie country.

Our own terminals are maintained at most points. These buildings vary in size according to the size of the community in which they are located. They are designed so as to provide sheltered space for the vehicles operated in that vicinity.

The climatic conditions existing in the Northwest, west of the Cascades is not at all severe. As a matter of fact, our climate is quite mild. To be more specific, during the winter just passed, there have been not more than three days of very light snow. No anti-freeze compounds were purchased or used, and anti-skid chains were used only in a very few instances. This brief summary of operation conditions is given in order that a more complete picture may be presented.

At this time our fleet consists of the following vehicles:

6 ¾-ton Panel Trucks
27 1 to 1½-ton Van type Trucks
16 2 to 2½-ton Van type Trucks
10 3 to 3½-ton Van type Trucks
5 8-ton (3 axle) Van type Trucks
16 3-ton Tractors
21 9-ton Van type Semi-trailers
1 9-ton Flat type Semi-trailer
9 6-ton (2 axle) Van type trailers
5 10-ton (3 axle) Van type trailers

The fleet consists of many makes, with Macks predominating in the 2-ton and over group. The local vehicles, ¾-ton to 2-ton, are operating at average monthly mileages varying from 300 to 1500. The trucks in the 3-ton group are averaging about 2000 miles per month while the 8-ton group cover about 3000 miles per month. The tractors (24000 gr.) average 5000 miles per month. Semi-trailers average 3000 miles and the trailers 2000.

The vehicles vary in age. Quite a number of those in the lighter groups are 10 years old. In the heavier groups the average age is probably close to five years. These data must be kept in mind since maintenance costs are materially affected by increased age. No new equipment has been added to the fleet since the summer of 1937.

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Recipe:

FOR "MAKING DOUGH"

TO begin with, I was put in charge of a fleet of some 200 gas and electric vehicles in the fall of 1933. They were in very poor mechanical condition and consequently very costly to operate. The reason for the vehicles being in this condition was due to serious lack of maintenance and lubrication.

At the time of my appointment the maintenance crew consisted of seven gas car repair-men, four electric car repair-men, one body repair-man, one car painter, one painter's helper, two car washers and one garage floor-man. The crew at the present time is the same with the exception of a small increase in gas car repair-men due to an increase in gas vehicles.

Immediately after my appointment I named Mr. M. Duffy, a capable mechanic, as shop foreman. This having been done, our recovery program was launched. We fully realized that complete recovery could not be made at once so we decided on a step-by-step program.

Our first step was to improve the lubricating methods. This work was being done by the garage floor-man, in addition to gassing and oiling trucks, repairing flat tires and feeding cars to the washers. We farmed tire work out to an outside tire shop and also relieved him of the job of feeding cars to the washers. (These cars are now fed by the drivers.) This man then had more time to concentrate on proper lubrication. We also replaced all obsolete lubricating equipment and installed a hydraulic hoist to simplify the lubricating problem. We immediately realized a drop in mechanical failures due to lack of lubrication.

Our next step was to outline a suitable maintenance system in the repair shop that subsequently led to the development of a preventive maintenance form that covered all parts and units of the vehicle to be tightened and adjusted every 90 days. We split the mechanic crew and used half to work preventive maintenance on those vehicles that could be suitably repaired with the least amount of work. The balance of the crew was used to completely recondition the cars that were below par. After this system was in use for a few months we found road failures were reduced from a former average of 3 per day to 2 or 3 a week. Relieved of the lost time servicing unnecessary road calls, the men had more time to concentrate on preventive maintenance.

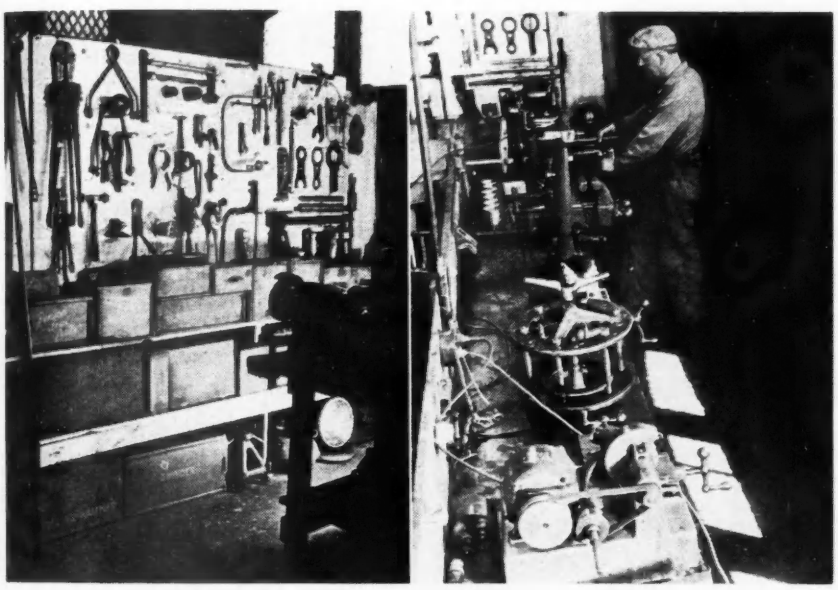
With the installation of this service we found it imperative to purchase several new pieces of shop equipment and tools, such as, exhaust gas analyzers, timing gages, hydraulic head wrench, tachometer, valve refacer, wheel cylinder hone, special tools, pullers, etc. Our cost figures began to move down in a few months and our miles per gallon of gasoline average climbed from 8.3 to our present average of 9.5. Miles per quart of oil average (drains included) climbed from 71 to our present average of 162.

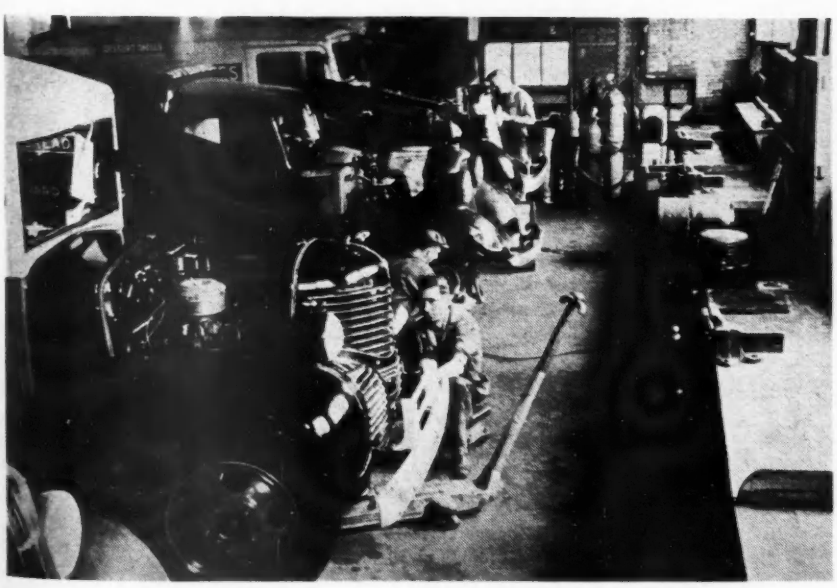
By G. E. LARSEN

Garage Superintendent
Ward Baking Co., Chicago

Ward Baking Co.'s new formula with preventive maintenance as principal ingredient produces a big batch of economy eliminating half-baked results, spoils and stales

IN THE FLEET SHOP





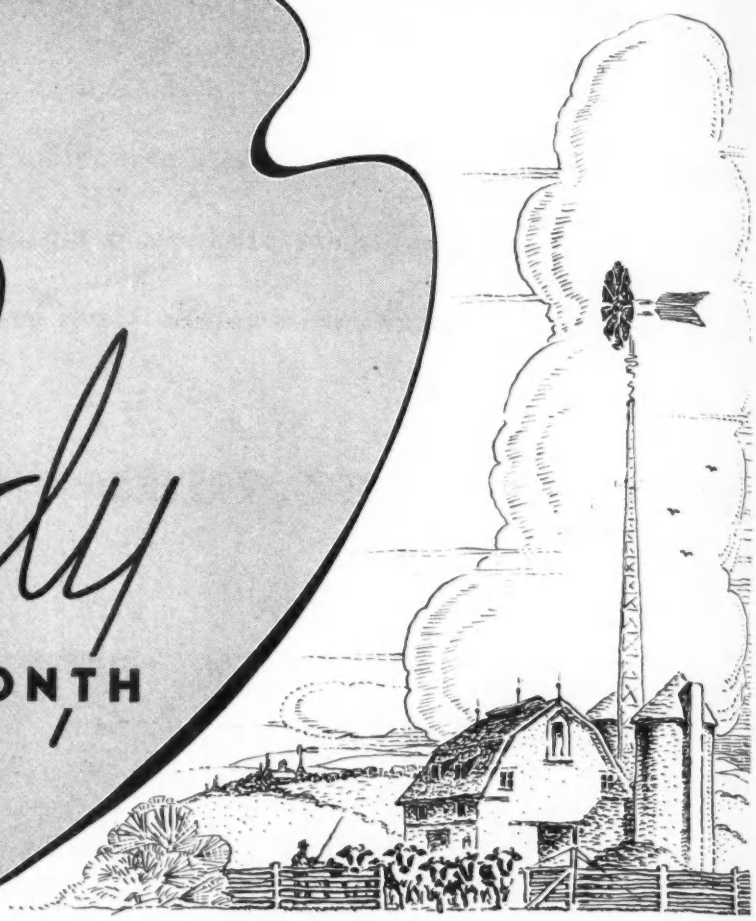
After the first year of this system I found my help was no longer required in the repair shop and things were running very smoothly under Mr. Duffy's supervision. I was then able to spend some time trying to improve other departments, such as washing, paint shop, body shop, etc. After several tests we determined a suitable washing solution. A high pressure washer (250 lb. pressure) was installed and that, along with other improvements, such as brushes, sponges, lighting, etc., enabled us to increase the number of wash jobs per man from 20 a day to 35 in spite of the fact that working days hours were reduced from 9 to 7½ hours per day.

Time and trial tests taught us that by revarnishing our vehicles every 10 months we could increase the paint job life from 1½ years to 2½ years. Preventive maintenance having been carried out through the bodies, we found it no longer necessary to replace the body when a new chassis was needed and the old bodies

(Turn to Page 100, Please)

Far left: one of the first steps in cost reduction was an improvement in lubrication and a hoist was installed. Next came a study of washing which resulted in power washing equipment so that trucks could be kept spotless as shown in next picture of a typical truck. Above: the tools have a place and several pieces of shop equipment have been added. Below: the shop force was split into a preventive maintenance crew and an overhaul and repair crew

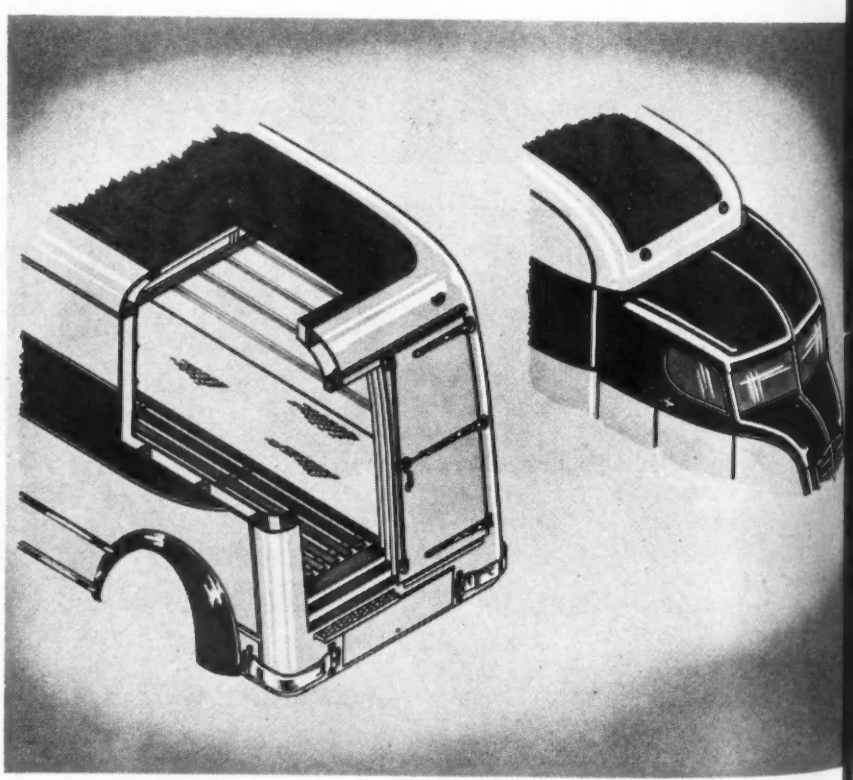
THE Body OF-THE-MONTH



PREPARED AND COPYRIGHT BY E. M. WESTBERG

This is the tenth in Commercial Car Journal's series of original body designs. Again we remind fleetmen that all designs are copyrighted but arrangements can be made for procuring complete construction drawings and specifications from the designer, who is familiar with the practical problems of truck body building. For further details, address the Editor, Commercial Car Journal, Philadelphia, Pa.

The September Body of the Month design will be a special bottler's body.



BODY DESIGNER . . . DESIGN NO. 10 . . . A REFRIGERATED TRAILER

VOCATIONAL USES

As illustrated the design this month was created for milk transport work, but it can be applied to the hauling of any product requiring the protection of refrigeration or insulation. Thus the design covers a wide range of commodities from ice cream and frozen meats in the lower temperature range to mushrooms and perishable fruits at higher temperatures.

DESIGN FEATURES

Outstanding of the design features in this unit is the application of the newly developed compensating fifth-wheel which has been placed on the market and is now in general use. With the aid of this type of fifth wheel a closure between trailer and body is easily affected by building solid flaps on the rear of the cab. These replace the older method of hinged wings and give a more squared front end design, resulting in more load space. A careful two-toned color layout also aids in giving the unit an appearance of a single streamlined job.

BODY MATERIALS

A body of this type affords a variety selection in the materials of construction for framing, paneling and insulation. It could be built of all aluminum framing, paneling and insulation; of steel throughout with glass wool, kapoc or dry-zero insulation, or with a steel understructure, hard wood framing, steel paneling and a choice of any of the insulations as mentioned.

DETAIL FEATURES

Most of the detailed features appear in the perspective cut away rear view. The inside side wall lining is ribbed at equal spacings to suit standard milk cases for side wall protection. The floor is diamond tread plate for wear with a wood floor rack which is removable for cleaning. The rear doors are of the three-step gasketed type construction and are full width and height. Door hinges are chrome-plated-strap type and the lock is a full length three point bar type lock. Just below the rear doors are two sliding shelves made of diamond tread plate which can be pulled out to facilitate loading and unloading. Two chrome plated bumperettes are used in place of a full width bumper, this allows room for a spare tire compartment in the rear, reached through a hinged door at the centre. A side door of the same construction and with the same type hardware can be provided. All rub rails as shown on the side elevation are either chrome plated or stainless steel. The front three-quarter view further illustrates the close coupling between the tractor cab and trailer body affected by the use of the compensating fifth wheel.

COLOR SCHEMES

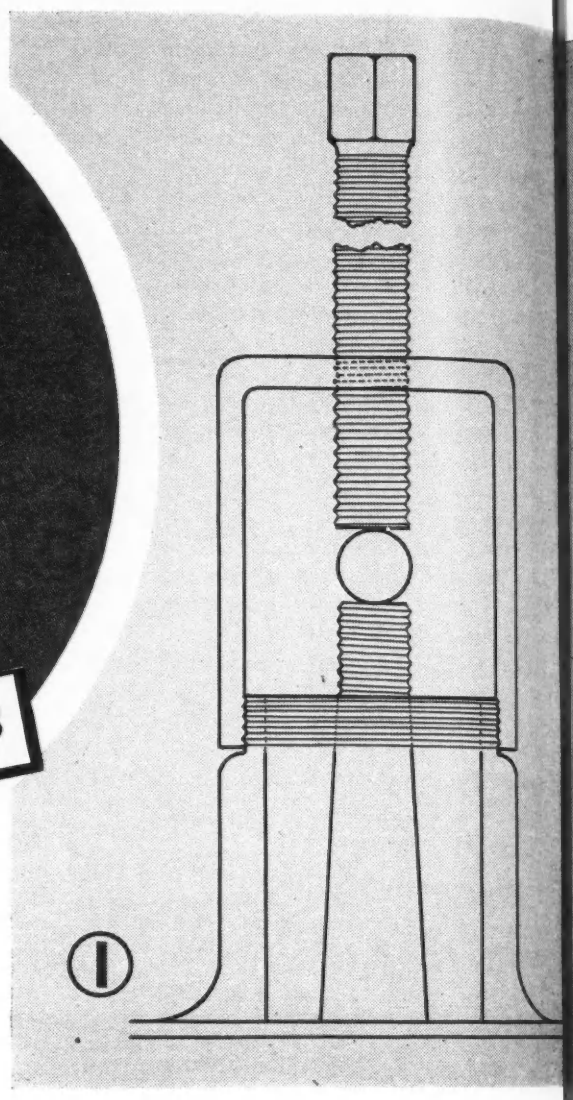
As stated previously a two-toned effect is used to aid in streamlining and obtaining the single unit appearance. The basic color covering the greater portion of the body should be light, say cream, the trim or darker color could be either red, green, blue or brown. The small lettering matches the trim color while the large lettering on the dark color is chrome plated brass or polished aluminum.

DIMENSIONS

No specific dimensions are suggested because a large unit of this design can be adapted to a variety of sizes, determined by the length and size of the route on which it is to be used. This leaves the selection of reasonable dimension to the needs of the operator.

Shop Hints

FROM FLEET SHOPS



1. Ball Bearing Wheel Puller

By L. C. Ming

Long Beach, Cal.

The use of a steel ball from an old ball bearing is an old trick with all shop men. But it may have escaped the attention of some that applied with pullers, especially the large ones with flat end screws, the ball will prevent ruining the end of the shaft by swelling. Simply place the ball in the tool center mark of the shaft to be pulled and apply the puller in the usual way.

2. Axle Puller

By J. L. Gaylord

Market St. Railway Co., San Francisco

The illustration gives the details of an axle puller that we have made in our shop and used for a long time. It never fails. The threaded part that screws onto the axle shaft can be replaceable and several parts made with thread sizes correct for any axle that may be encountered.

3. Floor Squeegee

By G. W. Wenzel

Ohio Edison Co., Akron, Ohio

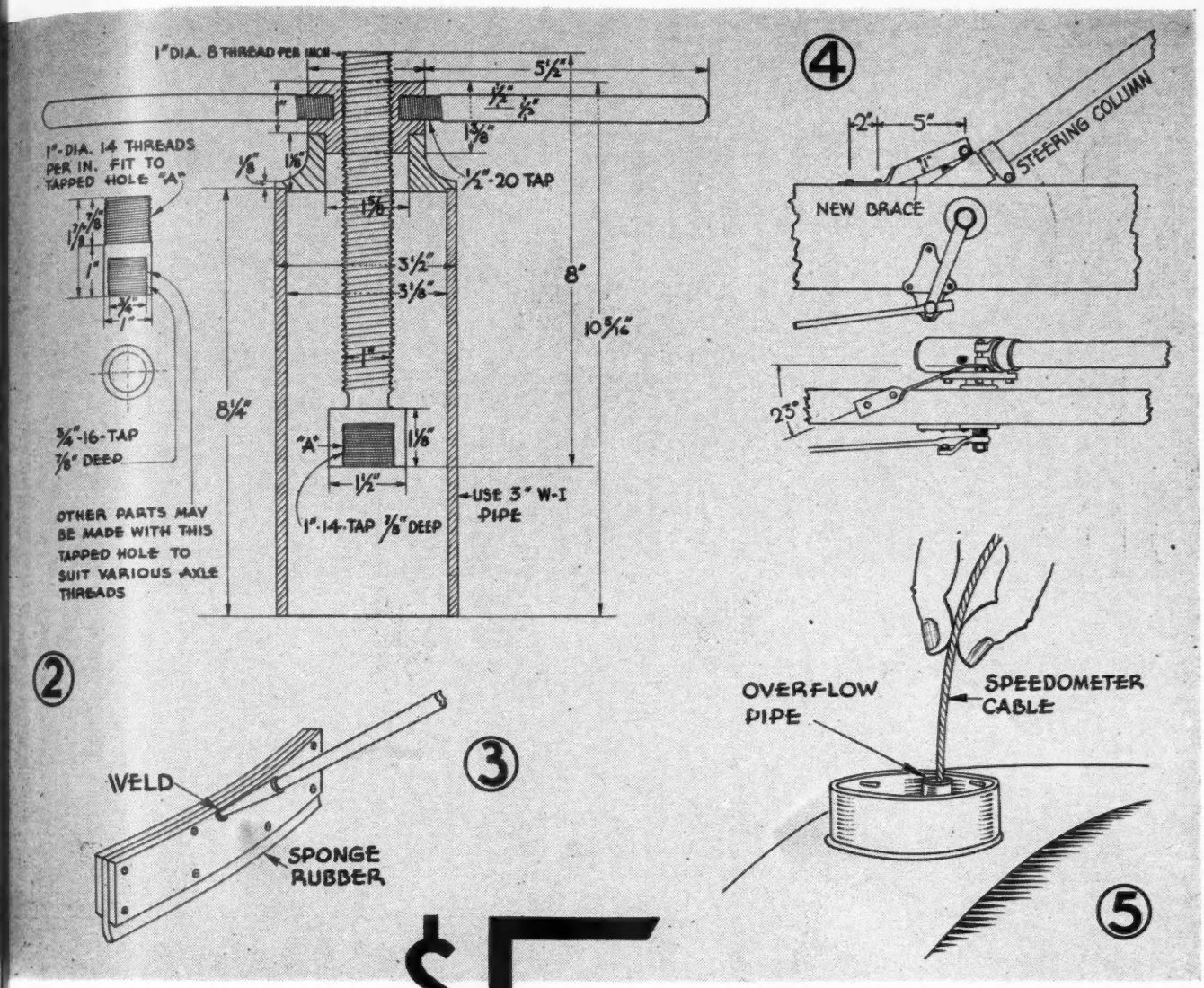
We have made a floor squeegee that works very well by placing a piece of sponge rubber ½ in. by 3 in. by 30 in. between two pieces of 16 gage metal 2 in. wide and 30 in. long shaped to a 1½ in. arc. The rubber is held between the two pieces of metal by ¼ in. bolts the lower edge of the rubber extending 1 in. outside the metal. A tapered socket is made of the same metal and welded on the back for attaching a handle 5½ ft. long. placed at an angle which will permit the arc to be flat on the floor when held in position to push.

4. Steering Gear Brace

By A. P. Dean

U. S. Dept. of Agriculture, Forest Service

We had some trouble with the steering gears of 1934 and 1935 Chevrolet trucks in especially severe service. This trouble was eliminated by adding the simple brace shown in the drawing. The cost of the correction was about $0.15.



This same idea can be applied in principle to other makes of steering gears although it would have to be modified considerably and would probably cost a little more.

5. Overflow Pipe Cleaner

By Ralph Ball

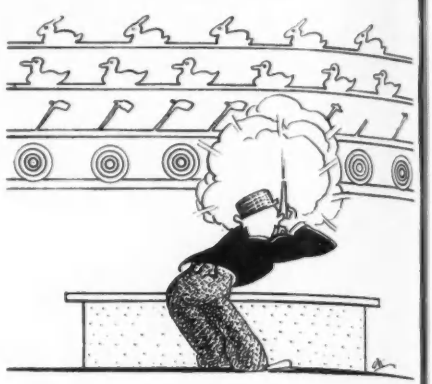
Lehigh Advertising Co., Allentown, Pa.

Plenty of trouble is caused by clogged radiator overflow pipes. These pipes can be cleaned out very nicely with an old speedometer cable which is strong and flexible. It can be pushed in and turned and will follow the curves of the pipe. It can also be used for gas or oil lines.

$5

Do you want to make $5 easily? Commercial Car Journal will pay $5 for every shop hint accepted for publication on these pages. Simply send in an outline of an idea, process or tool which you originated in your shop or which you believe to be unusual. Do not worry about literary or artistic style. Acceptance is based on the idea. CCJ will prepare it for publication. Scribble your idea on a handy piece of paper and send it in now.

The TROUBLE SHOOTING GALLERY



THE TARGET: CUMMINS DIESEL

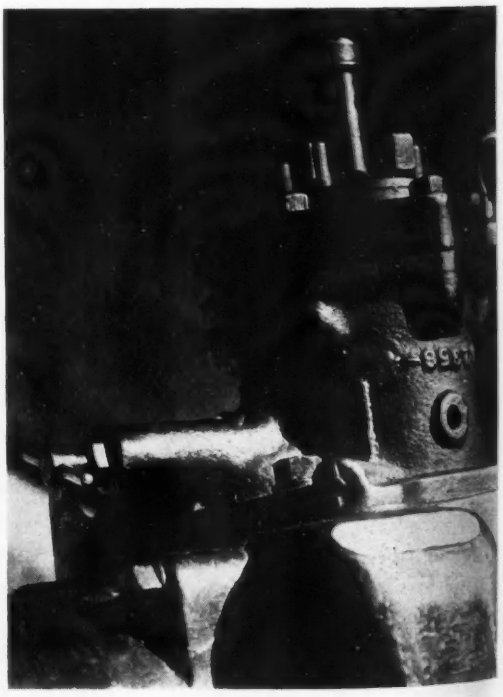
SUPPOSE now, just suppose that you are working in the shop of a fleet that operates some Cummins diesel engines. Suppose also that you are a good gasoline engine mechanic and that you know nothing or next to it about Cummins diesels. Either there is no one else available or the foreman forgets for the moment that you are not an old diesel hand and you get sent out on a road call. There is a Cummins diesel engine that either will not run or will not run right. How will you go about the job?

This is the way an experienced diesel mechanic would do it.

First, before you get to the stalled

This is the fourth round of the volley of diesel information being fired by the same marksman who gathered his information by visiting the manufacturers and consulting with their sharp-shooters. The next and concluding salvo of the series, shot at close range, will be on Servicing the Cummins Diesel Injector

By
HENRY JENNINGS
TECHNICAL EDITOR, COMMERCIAL CAR JOURNAL



truck you know that the trouble cannot be ignition since there is no ignition system on a diesel engine. Already one of the greatest sources of trouble and one which presents the trickiest problems in trouble shooting has been eliminated from consideration. Next there is the possibility of mechanical damage. Well, piston pins, rings and valves, etc., are the same as in the gasoline engine you cut your teeth on so there is no need for stage fright for a mechanical reason.

That leaves a few adjustments which have to do largely with the fuel system and the fuel system itself which may be unfamiliar territory to the gasoline engine mechanic. This can't be too hard if approached in our present mental condition if we manage to get hold of just a few instructions.

So we get to the truck. The first thing we do is:

1. Loosen all fuel lines to cylinder block connections, at large brass nuts.

2. Open the needle valve with the Tee handle on the front of the fuel pump by turning counterclockwise.

3. Relieve compression by pulling compression release lever (on left front) of engine and prop it in release position by inserting a bolt behind it.

4. Crank the engine over by hand until the mark 1 and 6 PR on the fan drive pulley (left of engine) lines up with the line mark on the lug located on the timing gear housing. In this position either No. 1 or No. 6 cylinder can be primed but not both of them. The priming pump on some trucks is located on the instrument board. On others, it is located on a bracket on the fuel pump.

5. Work the priming pump until the fuel line affected stops showing bubbles and exhausts solid fuel. Connect fuel line and give the primer one or two more strokes. Repeat the process until each cylinder has been primed. This will mean that the priming must be repeated on every timing mark.

6. Close needle valve on front of pump. This is important. If engine is started with this needle valve open there is no means of regulating fuel supply and engine will run away.

7. With the fuel pressure at about 150 lb. try to start the engine.

8. If the pressure will not stay up, look for second distributor disks. This is done by removing distributor to engine fuel lines and removing three alternate capscrews from the cap on top of the fuel pump. Then loosen the other three capscrews a half turn at a time and remove disks. They should have a mirror-like finish. If they are scored, they have an exchange value if salvageable. The disks must be slid apart as the finish make it impossible to pull them apart.

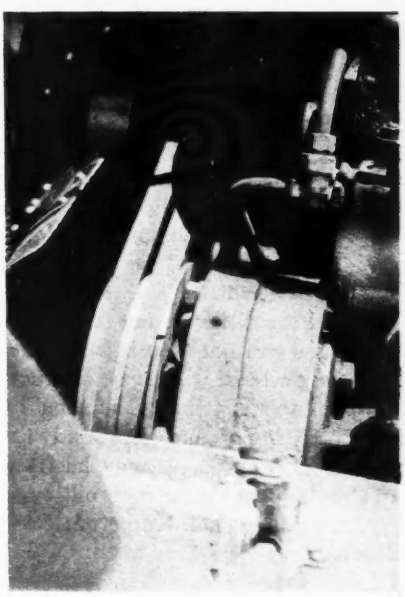
(Turn to Next Page, Please)

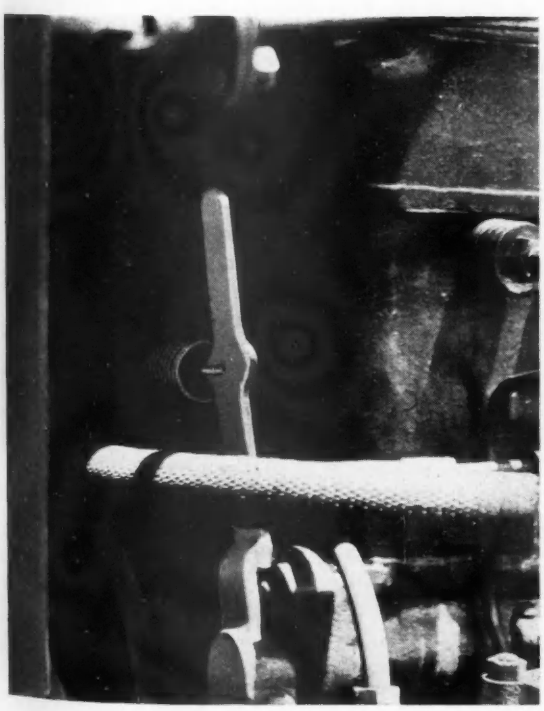
Bottom left: the Cummins pump showing pipe plug removed from timing peep hole in the center. Note the hand valve used in priming at the extreme left.

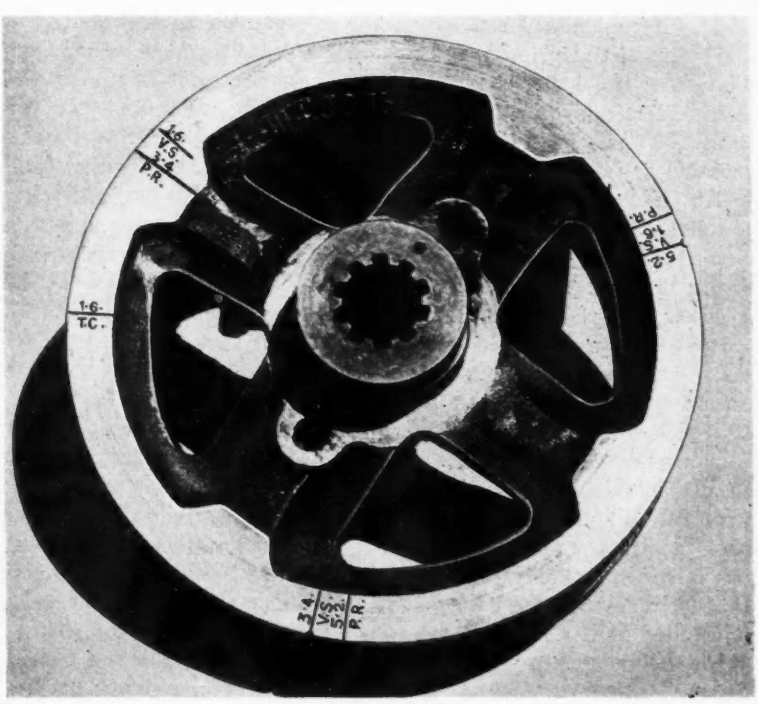
Next: Compression release lever which is never found on a gas engine. It holds valves open so that engine can be turned over by hand for timing.

Next: The fan drive pulley showing the top center, priming and valve setting marks. Marks must line up with a lug on the timing gear housing.

Below: The fan drive pulley in position with the marks facing the lug. Note notch in pulley which does not quite line up with the lug.

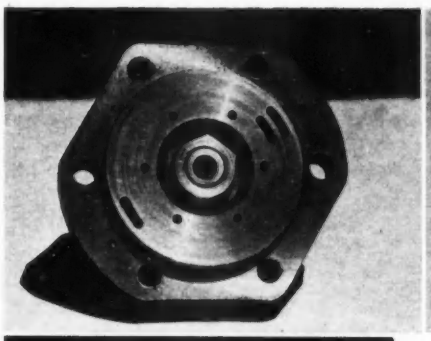


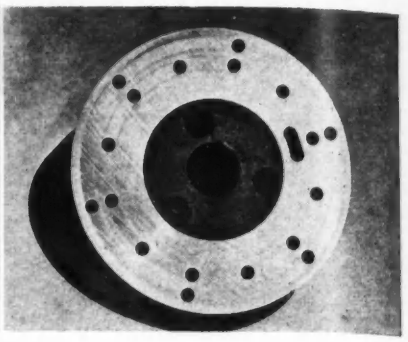




The TROUBLE SHOOTING GALLERY

THE TARGET: CUMMINS DIESEL





Above: Fuel distributor disks must have a smooth mirror-like surface. Scores on these disks permit fuel leakage after it has been metered for each cylinder. Below: primer and pressure gage mounted under hood in this instance. Sometimes they are mounted on the instrument board. Engine mounting seems preferable for the maintenance man

(CONTINUED FROM PAGE 37)

9. Scored disks may also be checked by removing the 1/8 in. pipe plug from the fuel pump. If fuel gushes out of the opening when the primer is operated the disks are scored. It is possible but not probable that under these conditions disks are okay but a distributor bushing is scored which means a distributor housing overhaul.

10. If the disks are not scored but the engine will not start it is possible that the metering plunger is stuck. Take off the distributor housing by removing four capscrews and the plunger is exposed. It may be freed up by lapping with fuel oil or a light lubricating oil. In severe cases it may be necessary to dress the plunger with a fine emery cloth. Make sure that the engine or distributor is not turned while they are apart.

11. If engine will run only when it is being hand primed it is certain that either No. 1 or No. 2 gear pump needs attention which means that the entire pump assembly should be dismantled and checked.

12. If there is considerable resistance in operating the priming pump the fuel screen between the pump and the distributor probably needs cleaning. To clean this screen remove the goose neck that runs from distributor disks to shut off cock. Screw out small hexagon housing that held shut off cock then back nut out of housing. A small cone screen is located in this nut. Clean the screen with fuel oil or kerosene and compressed air. Do not remove regulating valve from other half of housing. If it is removed make sure that it is reinstalled as it was taken out.

13. Prime pump after cleaning screen.

After this check the engine should either run or the mechanic should know why not. However, the information on this job did not say whether or not anyone else had been attempting to start the engine. This being the case it may be necessary to check one or two other things that in themselves would not need attention if they had been let alone. It may be that some un-informed driver or mechanic has attempted to make some adjustments so it might be well to check the pump timing, the valve and injector adjustments.

To check the pump timing:

14. With compression released turn engine over until No. 1 cylinder comes up on compression stroke. Check this with the TC 1-6 mark on the flywheel. With engine in this position remove pipe plug from side of pump housing and with a flashlight look into hole. Notch in distributor disk should line up with hole.

15. In this same position the mark in the pump housing adjacent to the drive coupling must line up with the notch on the coupling bushing.

16. With the compression release turn engine until No. 1 is coming up on compression. Turn engine until mark VS 1 and 6 or 1 and 4 as the case may be on the fan drive pulley lines up with the mark on timing gear housing. Move compression release lever to operating position or there will be a false adjustment on intake valves.

17. Loosen lock nut and turn adjusting screw on injector rocker as tight as possible with one hand on a 10 or 12 in. screw driver. Tap end of rocker arm over injector, jammer and tighten again with one hand. Lock adjustment.

18. Making sure that compression release is in running position adjust valves to .010 to .012 in. clearance warm in the usual manner.

If the engine starts but will not idle it probably means that the needle bearing on the pump cam roller needs replacement.

If the engine misses, the missing cylinder can be located by disconnecting the fuel lines to the cylinders one at a time. This will give the same effect as shorting out cylinders on a gasoline engine. In addition, to the reasons for missing which would also be true on a gasoline engine are:

Injector plunger binding as a result of dirt in injector or injector being screwed down too tight.

Air in the fuel lines.

Leak check valve in injector or fuel inlet.

AFTER hours

EDITORIAL COMMENTS BY George J. Hook EDITOR

The Railroads Don't Want Fairness . . . They Want Favors

IN their efforts to restrict competing forms of transportation the railroads have not had the support of the country's leading newspapers. Press support can be traced chiefly to newspapers in towns where the railroads exert a powerful influence as a factor in employment and in business conditions.

Some of the leading newspapers have taken direct issue with the activities of the railroads. Unless a fair memory has failed us completely we do not recall that the esteemed *New York Times* has been one of the direct critics.

The nearest thing to a criticism has just made its appearance. In the issue of July 24, under the heading "Changing Railway Picture" the *Times* alludes to abandonment of railroad trackage in New England and comments thus:

"These and similar problems of other railroads today offer a commentary on economic change. Industries, like living species, have their youth, their maturity and their decline. * * * Change is the mark of all life, and economic life is no exception. The railroads will continue to have a fundamental place in our transportation system. But now that their turn has come to accept a different and less dominant status, the problem is not how to resist changes that are inevitable but how best to accept them and to make the needed readjustments."

This is good advice but the railroads are not likely to follow it. To do so would involve the making of concessions to competing transportation services. Honest recognition of the inevitableness of economic change would involve, for instance, admission that the motor truck has a rightful place in the transportation picture and should be permitted to find its full measure of public usefulness without artificial restrictions. In order to permit the truck to realize its potentialities as a public servant, the railroads would have to cease inventing and fostering every conceivable form of legislative and regulatory burden to hamper the truck's usefulness and to minimize its competitiveness.

It would mean abandonment by the railroads of their hypocritical pose that they seek nothing more than fair and equitable treatment of all transportation services. That is the current technique of the railroad propagandists to get public support of their legislative and regulatory proposals. Certainly nobody wants the railroads to be treatedly unfairly . . . and that includes the truck industry. But there are many reasons for doubting that the railroads honestly want their competitors—particularly trucks—treated fairly, and that they seek no favors for themselves.

If the railroads really favored fair treatment of trucks they would fight side by side with highway interests to relieve motor trucks of the stupid weight limitation imposed on trucks by the State of Texas . . . a limitation sponsored by the railroads to give themselves a competitive advantage.

If the railroads really favored fair treatment of trucks they would not have tried this year in 16 states to have legislation passed limiting the capacity of trucks for the transportation of petroleum products. This is little more than a widespread attempt to raise the cost of transporting petroleum products by truck to a point where the business will flow back to the railroads. The South Dakota legislature proved this when it amended its restrictive measure and authorized the Public Utilities Commission to permit greater loads to any point not served by railroads.

If the railroads really favored fair treatment of trucks they would not now be championing the regulation of private motor truck owners under the terms of the so-called Commodities Clause of the Transportation Act. This clause prohibits the transportation by any carrier of any property (except timber and manufactured products thereof) mined, manufactured or produced by such carrier or in which it has an interest. This might have been fair regulation when it was invoked against ruthlessly competing railroads, but to apply it to private trucks would simply deprive countless private businesses of a natural, necessary and economical instrument in the handling of their affairs.

If the railroads really favored fair treatment of trucks they would not now be sponsoring a provision in the U. S. House of Representatives' revision of Senate Bill S. 2009 which would exempt Railway Express Agency from regulation under the Federal Motor Carrier Act. This is not fairness to regulated common carrier trucks; it is a favor to the railroads. By this exemption they gain an advantage and, knowing the railroads, one may be sure they will use this advantage to batter down their more stringently regulated highway competitors.

The truth is that railroads may profess fairness and equity, but what they seek and will continue to seek while hiding behind such hypocritical piousness are favors at the expense of their competitors.

No matter who advises them, or how good the advice may be, the railroads will not take it. They will fight for favors and it is up to all highway user interests to fight them to a standstill.

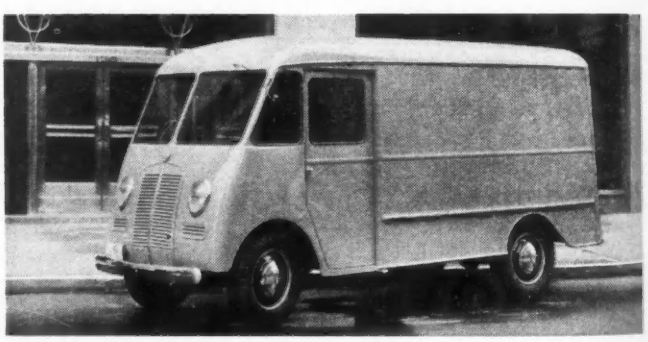
One lump or two?

ECONOMICS of F

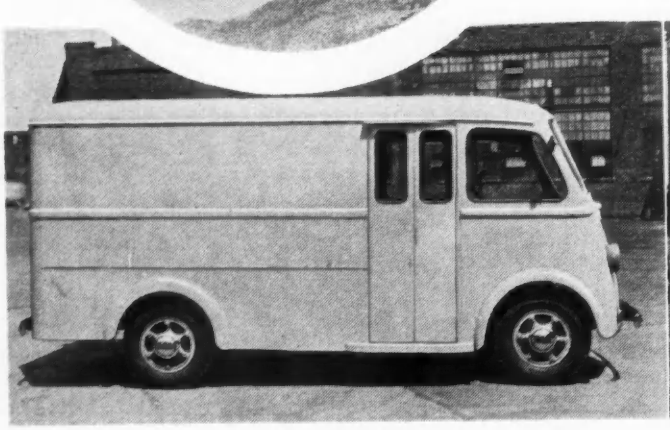
FIG. 1. "BEFORE AND AFTER" ANALYSIS OF 41 FLEETS

	No. of new units	Capacity of new chassis (Tons)	Capacity of old chassis (Tons)	Capacity of new body (cu. ft.)	Capacity of old body (cu. ft.)
BAKERIES					
B-A	8	½	1½	250	273
B-B	9	1	1½	250	220
B-C	40	1	Horse	250	140
B-D	9	½	¾	250	220
B-E	10	1	½	180	120
B-F	50	½-¾	½-¾	250	175
B-G	3	¾	1½-2	313	225
	1	1	2½	305	225
B-H	2	¾	¾	250	120
B-I	12	½-¾	¾	250	240
B-J	1	¾	1	250	220
B-K	10	¾	1	225	180
B-L	2	1	1½	324	216
B-M	1	1	1½	272	243
B-N	4	½	1	250	160
LAUNDRIES					
L-A	15	½	1-1½	250	210
L-B	3	¾	1½	250	250
L-C	1	1	1½	250	250
L-D	15	½ & 1	½ & 1	250	120-200
L-E	2	1	1½	250	220
L-F	1	½	¾	250	120
L-G	15	½	1½	250	220

	No. of new units	Capacity of new chassis (Tons)	Capacity of old chassis (Tons)	Capacity of new body (cu. ft.)	Capacity of old body (cu. ft.)
LAUNDRIES—Continued					
L-H	4	½	½	250	120
L-I	1	½	1½	250	220
L-J	100	½	¾	250	250
L-K	4	½	1	250	220
L-L	1	1½	1	313	203
L-M	2	1	1½	250	220
L-N	2	¾	1½	250	240
	2	1	1½	250	240
L-O	1	½	1	250	...
L-P	4	¾	1½	250	240
L-Q	2	¾	¾	250	...
	2	1	¾	250	...
L-R	9	¾	1½	250	240
L-S	6	½	½	250	120
L-T	4	¾	1-1½	250	142
L-U	4	½	½	225	112
L-V	5	¾	1½	225	145
L-W	8	½	1	250	250
DEPARTMENT STORES					
D-A	5	½-¾	1½	250	250
D-B	3	½	1	250	249
D-C	19	½	1	250	240
D-D	43	1	1	270	175



These are examples of modern package delivery units. In circle: General Motors' "Special Delivery". Above: New



FORWARD DRIVE Package Delivery Units

Special study by CCJ confirms claims of reduced cost and greater efficiency. An analysis of the actual experience of forty-one fleets using these modern units

THE modern package delivery truck, as exemplified by the illustrations on these pages, has earned a well-deserved place in the transportation picture. For, irrespective of individual claims, or of the manufacturer's name affixed to a particular model, they all possess one common basic advantage over conventional models. That is greater size. In fact, each has nearly twice as much space, in cubic-foot capacity, as can be obtained in standard panel body models on a chassis of equal size and weight.

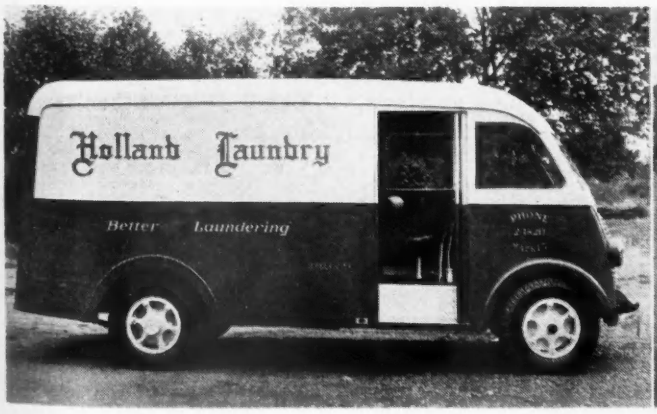
Greater load accessibility, better visibility, shorter over-all length, more driver comfort and increased advertising appeal are a few of the additional merits claimed, but size makes the real difference. Because of this fact a major economic upset may be on the threshold of the trucking vocations into whose fields the new units have penetrated—a domain of light-weight, large-bulk haulers such as the laundry, the baker, the department store.

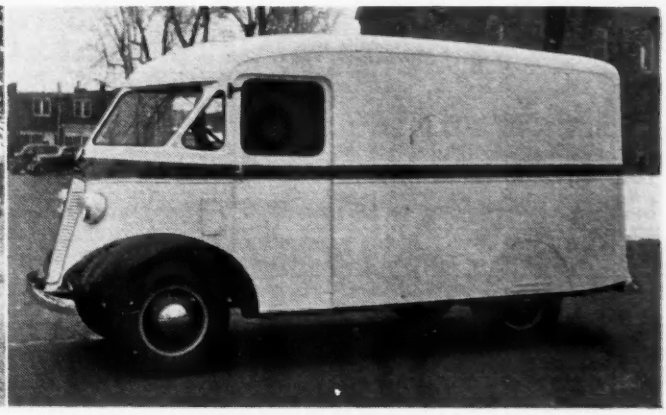
For most of these units are mounted on chassis with capacity ratings from ½ to 1 ton and, almost without exception, they replace older units of two kinds. On the one hand they are replacing the standard ½-ton panel delivery, on the other they are replacing units of 1½-ton or larger capacity fitted with standard or special bodies of approximately the same size as the new ones. In the first case the load capacity is approximately doubled, without appreciable increase in chassis weight or cost; in the latter, the cost of operation with smaller engine, smaller tires and more economical parts is almost certain to be less.

In either case, by taking full ad-

(TURN TO PAGE 64, PLEASE)

VanEtte body by Transportation Engineers for Ford chassis. Across the bottom: "White Horse" (116 in. wheelbase); Metropolitan body on IHC chassis; Adam Black body on Diamond T chassis, and Montpelier body on Chevrolet chassis





FORD ADDS ¾-TON MODEL TO V-8 LINE

New ¾-ton Ford truck with standard 90-in. stake body

A THREE-QUARTER-TON truck specially designed to bring greater delivery economy to laundries, dry cleaners, bakers, grocers, poultry-raisers, specialty shops and similar establishments, with the lighter, bulky type of load, has been announced by the Ford Motor Co.

Prices at the factory for the 85-hp. units, less distribution and delivery charges, federal, state and other government taxes, are: Express, $675; stake, $690; panel, $785; chassis with cab, $610; chassis with cowl, $515; chassis with windshield, $535. Prices for the 60-hp. units are $15 less. All are on a 122-in. w. b. chassis.

The panel body has a load length of 107¼ in., load width of 55½ in. and height of 55¼ in. The express body has a load length of 96 in., load width of 54 in. with sides 22¼ in. high. The stake body has a load length of 90 in., load width of 74 in. The stakes are 39 in. high. The platform measures 93 in. in length, 77 in. in width.

Hydraulic brakes are 12 in. in diameter and 1¾ in. wide, front and rear, giving a total drum area of 264 in. and brake lining area of 162 in. The rear axle is full-floating.

For maximum economy the 60-hp. engine is available with 6.67 to 1 rear axle gear ratio. When the 85-hp. engine is used a 4.11 or 4.86 to 1 rear axle ratio are recommended. A three-speed transmission is standard and a four-speed transmission available.

Wheels have drop center rims 16 in. by 5 in. and carry 6:50/16 six-ply tires in front and 7:00/16 six-ply tires on rear wheels.

Ford Shiftoguide

Ford has added to the cause of economical driving by installing on each of its trucks equipped with 4-speed transmissions a "Shiftoguide" speedometer calibrated to show the best point at which gears should be shifted. Maximum speed for low gear is 6 m.p.h.; for second, 12 m.p.h.; for third, 26 m.p.h.

OSHKOSH HAS SPECIAL-PURPOSE UTILITY MODEL

OSHKOSH MOTOR TRUCK, INC., announces a new model W-301 four-wheel-drive especially designed for post hole boring units, for pulling cable, laying plows, and general line maintenance work.

This model is equipped with a 4¼-in. x 4½-in. engine developing 100 hp. at 2400 r.p.m., and 5-speed forward, 2-rear, helical gear transmission mounted in unit with engine. The entire power plant and transmission are suspended in rubber, thereby allowing the frame to weave in passing through ditches without building up external stresses in the power plant.

The transfer case has two speeds which, in combination with 5-speed transmission, furnish a combination of 10 speeds forward and 4 reverse. Gear ratio in low is 140 to 1.

The transmission case has a special full-torque power takeoff drive which is used for driving the earth-boring unit and winch. By using various gear ratios in the 5-speed transmission any desired speed of the power takeoff shaft may be obtained.

Double reduction front and rear axles are used with dual 9.75 x 20 tires in the rear. Spicer needle bearing universal joints are used throughout.

New Truck Registrations by Makes by Months

	Auto-car	Brock-way	Chev-rolet	Diam-ond T	Dodge	Fed-eral	Ford	G.M.C.	Hud-son	Inter-nat'l	Mack	Ply-mouth	Reo	Ster-ling	Stude-baker	White Indiana	Willys	Misc.	Total
January 1939	143	127	13,615	378	4,002	85	10,188	2,384	47	4,709	482	507	168	25	169	348	135	203	37,715
January 1938	130	64	10,338	357	3,145	118	9,304	1,777	103	4,581	257	691	217	16	161	301	206	229	31,996
February 1939	134	98	12,007	308	3,821	79	9,224	2,218	44	4,284	398	510	159	29	143	275	97	274	34,102
February 1938	96	57	9,174	350	2,677	110	7,863	1,424	81	3,847	223	587	184	9	147	319	142	261	27,551
March 1939	150	168	16,565	392	4,852	122	11,886	2,772	39	5,507	483	879	175	17	190	373	148	365	45,083
March 1938	110	86	12,598	395	3,752	138	10,175	2,010	79	5,382	357	798	291	17	163	388	178	338	37,255
April 1939	149	139	16,386	515	4,688	137	11,631	3,170	53	5,617	547	1,014	106	24	172	421	141	291	45,201
April 1938	119	127	11,824	421	3,618	130	9,437	1,898	79	4,850	370	766	263	26	184	356	175	391	35,034
May 1939	184	177	15,899	427	5,185	173	11,706	3,215	44	5,359	666	1,118	78	45	196	442	166	301	45,381
May 1938	193	159	10,918	378	3,252	95	9,117	1,853	68	4,372	383	678	291	25	224	366	172	393	32,937
Five Months 1939	760	709	74,834	2,023	22,615	611	54,853	13,832	227	25,572	2,580	4,039	687	140	871	1,864	644	1,483	208,344
Five Months 1938	648	493	55,089	1,901	16,504	597	46,057	9,007	411	23,137	1,590	3,528	1,247	93	882	1,745	848	1,643	165,420
% Change...5 Months	+17	+44	+36	+6	+37	+2	+19	+54	−45	+10	+62	+14	−45	+51	−1	+7	−24	−10	+26

The First Move toward brake modernization is to CALL YOUR BENDIX B-K SERVICE STATION!

THE new truck and tractor brake laws enacted in state after state needn't offer any perplexing problem for truck fleets equipped with Bendix B-K Power Braking. Even old installations are quickly modernized to more than meet all laws. And every Bendix B-K Service Man has full information—complete charts that show instantly just what any truck or trailer system needs to give it the newest improvements in famous Bendix B-K Stopping Surety.

NEW FAST CHECK-UP TRUCK CHARTS

Call your nearest Bendix B-K service organization and get full particulars—whether you're buying trucks, selling them, servicing them or operating them. You'll want the details of this big new Bendix Service.

BENDIX PRODUCTS DIVISION
of Bendix Aviation Corporation
401 Bendix Drive, South Bend, Indiana

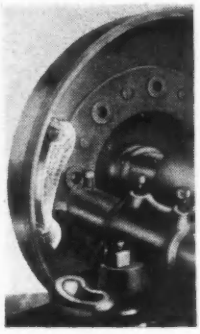
Every truck in modern traffic ought to have **MODERN BENDIX B-K CONTROLLED VACUUM POWER BRAKING**

When writing to advertisers please mention Commercial Car Journal

SHOWCASE of New Products

Brake Drum Hone

The Barrett "Superfinish" Brake Drum Hone has been announced by the Barrett Equipment Co., St. Louis, Mo. One of the many features of this new hone is that it can be used with any make of brake drum lathe.



After a brake drum has been machined, this device is placed between the cutting tool and the drum face. Less than one minute is required for the hone to eliminate all tool and chatter marks. It will handle drums from 9 in. diameter to 24 in. diameter.

In construction the unit embodies a tension member framework, to which is attached two adjustable honing stones with wiper felts. Honing stones are available for producing any type of finish desired.

No. 1 Hone Set for cast iron and centrifuse drums is provided with honing units and two extra stones in attractive kit box, and retails at $12.50.

No. 2 Hone Set is a double set for honing cast iron, centrifuse, semi-cast and steel brake drums and retails at $22.50 list.

New AC "Lucite" Reflector

A new reflex reflector signal for buses, trucks and trailers, and said to far surpass in performance any heretofore used, has been introduced by the AC Spark Plug division of General Motors. The brightness of the new reflector, which is known as Series 13, exceeds that of the most brilliantly lighted tail lamp at distances from 300 to 700 ft. and can be seen instantly a quarter of a mile on the road.

Optical precision at low cost as well as extreme resistance to breakage has been achieved by making the reflector signal of "Lucite," a new member of the plastic family, developed by du Pont.

Rubber Dressing

A new black rubber dressing for restoring the original color to auto tires, rubber mats, and running boards, called "Tire Black," has just been added to the No. 7 line of Chemical Specialties by the du Pont Company. This product can be applied easily with a sponge or damp cloth. It is harmless to all surfaces.

Hild Floor Machines

A new floor scrubbing machine featuring a shower feed system that prevents flooding has been introduced by the Hild Floor Machine Co., 1313 W. Randolph St., Chicago. By controlling amount of water released it is possible to scrub floors with open cracks and also to scrub near valuable

equipment without danger of water damage.

A companion machine is the new Hild all-purpose vacuum machine particularly adapted for drying up puddles or damp floors. Suction is sufficiently powerful to empty a two-gallon pail in 15 seconds. For full details of either machine, address the manufacturer.

Welding Compound

The Miller Mfg. Co., Camden, N. J., has a new heat localizing paste known as Wonder Weld Heat Resisting Compound. The paste is to be mixed with water and spread around the area to be welded. It will concentrate the heat so as to protect glass or paint in surrounding area. The paste is not gas or acid forming and when the welding job is finished can be removed from any finish, leaving it as before.

Flexible Identification Light

A new three gang flexible identification light, especially designed for v-type roofs and rounded front ends, has been announced by K-D Lamp Co., 610 W Court St., Cincinnati. Known as model 500, it has three 2½-in. beehive lamps mounted on a steel strip housed in extruded rubber. All wires are concealed. Write K-D for full details.

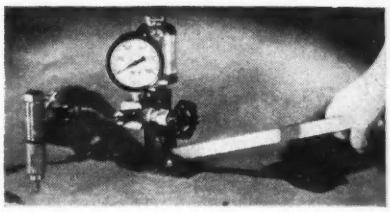
"Big Beam" Portable Lamp

"Big Beam," a super-power portable hand lamp furnished with either replaceable dry cell battery or special storage battery should find a place in many fleets.

The prefocused bulb delivers a 2500 ft. beam, which may be diffused by an interchangeable floodlight lens. Descriptive literature sent free on request to U-C Lite Mfg. Co., 500 N. Dearborn St., Chicago.

Diesel Injector Tester

A compact, portable hand pump for testing Diesel fuel injectors in the field is now being made by Diesel Equipment Corp., 4401 N. Ravenswood Ave., Chicago. It is designed to permit the user to check all size injectors of most standard makes, including Deco, Timken, Bendix, Bosch,



Caterpillar, Hesselman, International and others.

A mechanic, using the Deco pump, can measure injector opening pressure, determine the correct adjustment, tell whether the spray pattern is uniform, and detect other irregularities. Opening pressure can be tested without removing the injectors from the engine block.

Do-Ray Driving Lamp

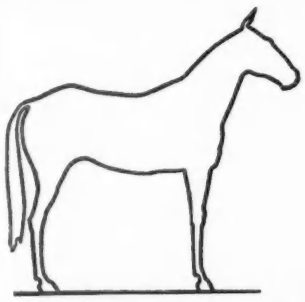
The Bright Ray Crest, a deluxe driving lamp, is announced by Do-Ray Lamp Co., 1458 S. Michigan Ave., Chicago. The new Model 800 develops 40,000 c.p. and is visible for 1500 ft. The lamp has a universal mounting bracket that fits all cars. A theft-proof feature is one of the important points. Lamp, door, and reflector all brass, chrome plated. Available with white or amber lens. List price is $9.00.

Air-Motored Mixer

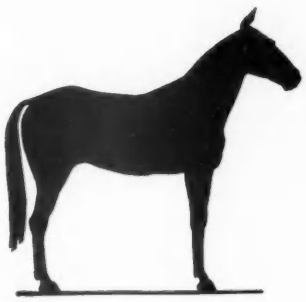
Type AB Pneumix, an air-driven mixer designed especially for use on five-gallon batches, is offered by the Eclipse Air Brush Co., 390 Park Ave., Newark, N. J. Because of the air motor fire and explosion hazards are virtually eliminated. Speed is variable from 30 to 6000 r.p.m. Address the manufacturer for full details.

(MORE NEW PRODUCTS ON PAGE 60)

Horses of different colors are . . .



BATTERY COST, and



BATTERY COST *PER MILE*

Commonsense says that, unless a truck will run, it can never pay its way. If its engine won't start, it can't run. A low-price battery that may or may not keep on starting the engine can cause a tie-up like that. Then it's "junk" the battery or risk the same danger over and over again. That's why so many "low price" batteries cost plenty.

It's different with an Exide. You pay a fair price and get dependable service. You avoid many tie-ups and delays. And you avoid frequent battery replacements. So you save twice over, making your battery cost per mile drop 'way down.

This is not theory. It is the kind of hard, provable fact that has made dozens of the largest fleet operators standardize 100% on Exide. There are heavy-duty Exides for all commercial vehicles, and Exides for cranking Diesel engines. Why not install the type of Exide your equipment needs, then watch your battery cost per mile start shrinking? See your Exide Wholesaler today.

Exide
HEAVY DUTY BATTERIES
for Commercial Service

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia
The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto

When writing to advertisers please mention Commercial Car Journal

NEWSCAST

Bart Rawson Commentator

Hercules and Freuhauf are cooperating with Ford branches in a nation-wide demonstration of five diesel-powered tractor trailer units

George Fiedler, president of Chicago Dodge Dealers Association, signs million - dollar Dodge truck order for consolidated display to the apparent approval of fellow members

House to Offer Substitute Bill

After six weeks of hearings, the House Committee on Interstate and Foreign Commerce has decided to offer a substitute Transportation Bill in place of the much discussed S. 2009 recently passed by the Senate. Major variations from the original Senate bill now include (1) the placing of all forwarders doing a million-dollar-a-year business under ICC regulation, (2) ditto for water carriers, (3) empowering of the ICC to establish maximum and minimum through rates for rail and water carriers including differentials between the two, (4) requiring of ICC to investigate rail rates on South and West, (5) provision for Federal aid to railroads for bridges, and (6) empowering of RFC to make loans to railroads.

An additional provision which has aroused the vigorous opposition of trucking interests stipulates that the operation of motor vehicles by railroads in terminal areas be subject to the same regulations as the rails. Operation of motor vehicles by railroads outside of terminal areas would be subject to the Motor Carrier Act.

In an open letter to all House members John V. Lawrence. general manager of the American Trucking Associations, Inc., asserted that the exemption of the railroad-owned Railway Express Agency from the provisions of the Motor Carrier Act would give the railroads the opportunity to "re-establish a monopoly of land transportation."

$750,000,000 for Toll Roads

Meanwhile legislators as well as John Q. Public at large were holding their hats in Washington, July 10, when the President's new $2,600,000,000 "Spend-Lend" program was introduced simultaneously in both houses. Known as the "Self-Liquidating Projects Act of 1939" the bill incorporates an item of $750,000,000 for use by the Public Roads Administration for the construction and maintenance of highways.

The bill would authorize the collection of tolls sufficient to amortize the cost of the highways, the report of the Bureau of Public Roads that such would be impossible, notwithstanding (see COMMERCIAL CAR JOURNAL for June).

Amid other operating details, the bill would empower the administration to use the right of eminent domain in acquiring the right of way and would empower it to purchases but not condemn adjacent land for speculative purposes.

At this writing, hearings are in progress. Before both Senate and House Banking and Currency Committees, Commissioner of Roads MacDonald has testified that the possibility of self-liquidating toll roads is "quite remote."

Illinois Trucking Comes Out on Top

Illinois fleetmen rested more comfortably early this month when the last of the legislative drives to curb highway transport was booted right out of the Capitol corridors and the "Illinois Truck Act" was passed in both houses.

Most vicious of the anti-truck moves was the "Sunday Bill" which would bar trucks from the highways for 54 of the 168 hours in every week. It was killed in the lower house.

The Illinois Truck Act, which at this writing was waiting for the Governor's signature, places all truck regulation under the Department of Public Works and Buildings, which will have regulation over all phases except rates.

Removal of the rate clause, plus the addition of an amendment providing a "grandfather" clause for established carriers, did much to bring about approval of the act by virtually all trucking interests. This grandfather clause provides operating rights for established carriers and protects them from the potential harm of a recent circuit court decision that prohibited the Keeshin Express Co. from operating in Northern Illinois.

Truck Show Offers Educational Space

The National truck show has offered 1000 sq. ft. of space (or more) for an educational display to convey the economic necessity of highway transportation. This display would, of course, be directed at the general public as well as to those in the industry. The offer was made known through an open letter from J. F. Winchester, president of the show, addressed to the Emergency Council of Highway Defense. The letter expressed the hope that that organization would, through suitable means, undertake the execution of the display.

TRUCK PRODUCTION
(United States and Canada)

	1939	1938	Per Cent Change
January	62,509	58,062	+ 8.0
February	61,247	51,464	+19.0
March	77,097	52,106	+48.0
April	68,063	47,818	+42.3
May	63,759	41,575	+53.4
June	66,946	41,857	+60.0
6 Months,	399,621	292,882	+33.0

Reciprocity

Another reciprocity agreement has been effected, this time between North Carolina and Tennessee. Full reciprocity of privileges is granted for all privately operated trucks but does not apply to for-hire vehicles.

ICC Adds G-Man Staff

We told you once before that never a month went by but that the Interstate Commerce Commission made news. Under its wing 20 brand new inspectors have joined the G-man ranks, charged with the explicit duty of seeing that trucks and buses are in sound operating order.

Picked from a field of 1200 applicants the new inspectors have just completed three weeks of intensive training under the baton of H. H. Kelly, chief of the ICC Safety Section. Accident investigation and first aid were a part of the training schedule.

Terminal Quintuplets

The Dixie-Ohio Express Co., which pretty well blankets the central part of the country from Atlanta to Cleveland has just opened four spic and span new terminals at Hamilton and Columbus, Ohio, Atlanta, Ga., and Louisville, Ky.

And in Chicago work has started on a new $100,000 terminal for the Chicago Cartage Co. It will be known as the Midwest Terminal Corp. and will also serve as Chicago terminal for Central Wisconsin Motor Transport Co. and Northern Illinois Freight Lines, Inc., both of which are affiliate organizations.

(TURN TO PAGE 58, PLEASE)

KEY TO ABBREVIATIONS AND REFERENCE MARKS

COMMERCIAL CAR JOURNAL'S TRUCK SPECIFICATIONS Table

Brought up to date in this issue from data supplied by truck manufacturers

KEY TO ABBREVIATIONS AND REFERENCE MARKS

GENERAL

Make and Model—Only basic models are listed. Variations are available with most manufacturers.

Tonnage Rating—Where a spread of ratings is given the maximum ratings are for ideal operating conditions and the minimum for extremely difficult conditions; the ranges between are for varying operating conditions.

Chassis Price—Chassis price quoted applies to standard wheelbase with standard tires. All prices are F.O.B. factory.

Gross Vehicle Weight—Is chassis weight stripped, plus body and cab weight, plus payload. Gross vehicle weight is based on maximum recommended tire size, not on tires listed as standard.

Chassis Weight Stripped—Is weight of standard chassis with standard equipment, with crankcase and cooling system full, and 5 gal. of gasoline in tank. Does not include weight of cab. Exceptions are noted.

Maximum Tire Size—Is furnished at extra cost, if the maximum differs from the standard tire size. Dual rears are understood except where otherwise noted.

Maximum Brake HP. at Given R.P.M.—Is actual dynamometer reading without accessories.

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

Tractors—Unless given the designation N (meaning not available as tractor), all standard models may be assumed to be available as tractors.

(C)—Converted Ford or Chevrolet model, identifiable by the engine make listed.

(D)—Diesel equipped.

(N)—Not available as tractor.

(T)—Specifically designed for tractor use only.

c.f.—Cab-Forward

c.o.e.—Cab-over-engine design.

e.b.s.—Engine-between-seat design

e.u.s.—Engine-under-seat design

(1) Autocar—Larger service brake areas on rear axles are provided when tires of 24" base are supplied.

(a) Price does not include auxiliary axle. Chassis weight includes auxiliary axle complete; area of brake lining and drum area do not include auxiliary rear axle.

(d) Models intended for dump or tractor service only.

(g) Chevrolet—Governor set not to exceed 45 M.P.H.

(2)—These models available with double drop bus frames.

(*) Ford—5.83 axle ratio also optional at no extra charge. 2-speed axle (ratios of 5.83 and 8.11) optional at extra cost.
(4) General Motors—Tire size indicated in column "Maximum Tire Size Furnished" is maximum capacity dual tires recommended for normal operating conditions. AC-300 to AC-851 and AF-300 to AF-850 inclusive are also available for export only as coach chassis. Dual performance rear axles are available on AC-300 to AC-700 and AF-300 to AF-700 inclusive. Double reduction rear axles are available on AC-450 to AC-700 and AF-450 to AF-700 inclusive. GMC "426" engine is available on AC-850 and AF-850.

(5) International Harvester—For the express purpose of best fitting the truck to the individual job most International Trucks can be provided with optional engines, transmissions, axles, etc., and these units when so equipped are yet considered standard stock truck models.

Chassis weights as listed involve popular wheelbases, recommended tire sizes and include weights of cabs.

(a) Mack—Weight in Chassis Weight column is shipping weight which includes weight of a chassis of medium standard wheelbase, cab, prevailing tire size, ready for the road.

Mack—For the express purpose of best fitting the truck to the individual job most Mack Trucks can be provided with optional engines, transmissions, axles, etc., and these units when so equipped are yet considered standard stock truck models.

(6) Reo—Also available with four speed transmission and bevel gear rear axle.

(7) Sterling—Available with Diesel.

(*) White—Tractor rating only.

(9) Willys—Advertised list price less Federal tax. Cab Pick-up $530; Cab Stake $545; Panel Delivery $824. Prices, complete with shock absorbers and front and rear bumpers. Standard tires 5.50/16—4 ply; Panel Del. 6.00/16—4 ply; 6.00/16S—6 ply—optional.

(10) Indiana—These models are for Government use and their chassis price depends upon quantity ordered.

(11) Diamond T—Weights given in Chassis Weight column are average chassis weights.

(12) Available—All models available in c.o.e. design.

(13) White—This is special model—price on application.

(14) Federal—263 cu. in. engine and 11" clutch available on Models 15 and 75. 404 cu. in. and 428 cu. in. engines available on Model 40. 428 cu. in. engine available on Models 50 and 50H. Oversize or two-speed rear axles available on Models 15, 18, 20, 25, 29, 29H, 40, 75, 80, 85, 89 and 89H. Double reduction rear axles available on Models 20, 25, 29, 29H, 40, 80, 85, 89 and 89H. Two or three-speed auxiliary transmissions available on all models. All above equipment furnished at extra cost.

(15) La France-Republic — Chassis weights include cab, water, oil, spare rim or wheel, and approximately five gallons of fuel.

(16) Marmon-Herrington—All Model F Units become Model FF if furnished with 95 h.p. Ford engine. Chassis weight increases 20 lbs., and list price increases $25.

MAKES—ALL

A LaF—American La France.
B—Bendix. **BL**—Brown-Lipe.
Bu or Bud—Buda.
Cat—Caterpillar **Cl or Cla**—Clark.
C or Chev—Chevrolet.
Co—Covert **Con**—Continental.
Col—Columbia.
Cum—Cummins-Diesel
Eat—Eaton. **Fu**—Fuller.
F—Ford.
Her—Hercules. **L**—Lockheed.
LO—Lockheed front, Own rear
LW—Lockheed front, Wisconsin rear.
Lyc—Lycoming.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Sal—Salisbury
Shu—Shuler.
Spi—Spicer
T or Tim—Timken.
TO—Timken front, Own rear.
TW—Timken-Wisconsin
TWH—Timken Wisconsin Herrington
WG—Warner Gear.
WH—Wisconsin Herrington.
W-Hes—Waukesha Hesselman.
Wau—Waukesha.
W or Wis—Wisconsin
WO—Wagner front, Own rear.
Ws—Westinghouse.

BRAKES—SERVICE

Location

2—Two Wheels, rear only.
2/4—Two-wheel brakes effective on all four wheels through driveshaft.
4—Four Wheels, front and rear.
4r—Four Wheels, rear only.
6—Six Wheels, front and rear.

Type

I—Internal. **X**—External.

Operation

A—Air.
D—Hydraulic and mechanical.
H—Hydraulic.
M—Mechanical.
V—Vacuum.

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels. **4**—Four wheels.
6—Six wheels.
J—Jackshaft.
T—Transmission.
F—Driveshaft.
P—Propeller shaft.

Type

D—Tru-Stop disk.
I—Internal. **X**—External.

BRAKE DRUMS

Material

a—Cast alloy iron.
A—American Car Fdry.
C—Centrifuse. **D**—Dayton.
E—Ermalite. **F**—Furnace Iron.
G—Gunite. **N**—Nickel Iron.
p—Pressed steel. **c**—Cast iron.
s—Cast steel. **P**—Pressed steel.
(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type

I—"I" Beam. **C**—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center.
Tf—Tapered front.
X—x-Braced.

GOVERNOR STANDARD

Y—Yes. **N**—No.

REAR AXLE

Final Drive and Type

B—Bevel. **C**—Chain.
D—Dead. **F**—Full-floating.
Hy—Hypoid **d**—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
½—Semi-floating.
¾—Three-quarter floating.
(*) Ratios other than standard at extra cost.
(**) Only one ratio.

Drive and Torque

A—Radius Rods and Torque Arm.
H—Hotchkiss. (springs)
R—Radius Rods
T—Torque Arm.
U—Torque Tube.

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group.
4R—Forward and rear units of Rear Axle Group.
4F—Front Axle and Forward unit of Rear Axle Group.
4FR—Front axle and rear unit of rear axle group
6—All wheels.

Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	Maximum Tire Size Furnished	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Sp'ds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Std. W. B.)	FRAME: Side Rail Dimensions	Type
♦ 1	Autocar(1) C-10	.....	1250	139	179	.....	4820	6.50/20D	8.25/20	Her JXB	6-3⅛x4¼	263	5.8	184	73-2300	7-2½x10½	Y	Cla 185F	4	Tim 54412	SF	H	5.83-6.87	Tim 31013	L4IHV	308	470	e	TD	62½	8x2¾x¼	T
2	.....(D) DC-10	.....	2550	139	179	.....	4955	6.50/20D	8.25/20	Her DJXB	6-3½x4½	260	15.	178	77-2600	7-3x10½	Y	Cla 185F	4	Tim 54412	SF	H	5.83-6.8	Tim 31013	L4IHV	308	470	e	TD	62½	8x2¾x¼	T
3	.....C-20	.....	1625	139	179	.....	5180	6.50/20D	9.00/20	Her JXC	6-3¾x4¾	282	5.8	197	78-2300	7-2½x10½	Y	Cla 200VO	5	Tim 56410	SF	H	6.16-7.4	Tim 31015	L4IHV	358	578	e	TD	62½	8x2¾x¼	T
4	.....(D) DC-20	.....	2925	139	179	.....	5315	6.50/20D	9.00/20	Her DJXC	6-3¾x4½	298	15.	208	83-2600	7-3x10½	Y	Cla 200VO	5	Tim 56410	SF	H	6.16-7.4	Tim 31015	L4IHV	358	578	e	TD	62½	8x2¾x¼	T
5	.....C-30	.....	2150	142	200	.....	5440	7.00/20D	9.00/20	Own 315	6-3¾x4¾	315	5.5	220	81-2400	7-3x12⅝	Y	Cla 200VO	5	Tim 56400	SF	H	6.16-7.4	Tim 32502	L4IHV	402	659	e	TD	62	9x3x¼	T
6	.....(N) C-40	.....	2850	164	200	.....	6920	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own RL5	5	Own RL	2F	H	6.49-7.89	Tim 32502	LO4IDV	466	694	e	2I	84	9x3x¼	T
7	.....(T) C-40-T	.....	3000	142	164	.....	7090	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own RL5	5	Own DB	2F	H	6.49-7.13	Tim 32502	LO4IDV	466	694	e	2I	62	9x3x¼	T
8	.....(d) C-40-D	.....	3100	154	164	.....	7320	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own RL5	5	Own DB	2F	H	6.49-7.13	Tim 35000	LO4IDV	466	694	e	2I	74	9x3x¼	T
9	.....(N) C-50	.....	3125	164	200	.....	7205	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own RL5	5	Own DB	2F	H	6.49-7.13	Tim 35000	LO4IDV	466	694	e	2I	84	9x3x¼	T
10	.....(d) C-50-D	.....	3325	154	164	.....	7840	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Fu 5A43	5	Own TF	2F	H	7.85-8.57	Tim 35000	LO4IDV	567	831	e	2I	74	9x3x¼	T
11	.....(N) C-60	.....	3600	164	200	.....	8210	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own DF5	5	Own DB	2F	H	6.49-7.89	Tim 35000	LO4IDV	466	694	e	2I	84	9x3x¼	T
12	.....(T) C-60-T	.....	4100	148	164	.....	8260	9.00/20D	9.75/20	Own 408	6-4¼x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own DF5	5	Own TF	2F	H	7.20-8.57	Tim 32502	LO4IDV	567	831	e	2I	68	9x3x¼	T
13	.....(N) C-70	.....	4500	148	200	.....	8670	9.75/20D	10.50/20	Own 408	6-4¼x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own DF5	5	Own TF	2F	H	7.20-8.57	Tim 35100	LO4IDV	580	930	e	FD	84	9x3x¼	T
14	.....(T) C-70-T	.....	4600	148	164	.....	8350	9.00/20D	10.50/20	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own DF5	5	Own TF	2F	H	7.20-8.57	Tim 32502	LO4IDV	567	831	e	FD	68	9x3x¼	T
15	.....(N) C-80	.....	5100	164	200	.....	9790	10.50/20D	10.50/24	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own TF5	5	Own TG	2F	H	7.20-8.68	Tim 35100	LO4IDV	580	930	e	FD	84	10½x3x¼	T
16	.....(T) C-80-T	.....	4900	148	164	.....	9320	9.75/20D	10.50/20	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own TF5	5	Own TG	2F	H	7.20-8.68	Tim 35000	LO4IDV	567	831	e	FD	68	9x3x¼	T
17	.....(d) C-80-D	.....	5750	170	170	.....	10080	10.50/20D	10.50/24	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Ow TF4:A3	12	Own CGA	2F	H	7.69-8.52	Tim 26452	LO4IDV	580	930	e	FD	90	10½x3x⅞	T
18	.....(N) C-90	.....	5850	182	200	.....	10540	10.50/20D	11.25/20	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Own TF5	5	Own TG	2F	H	7.20-8.68	Tim 26452	TO4IA	631	930	e	FD	102	10½x3x¼	T
19	.....(T) C-90-T	.....	5700	148	164	.....	9710	10.50/20D	11.25/20	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Own TF5	5	Own TG	2F	H	7.20-8.68	Tim 35100	TO4IA	631	930	e	FD	68	9x3x¼	T
20	.....(d) C-90-D	.....	6650	170	170	.....	11440	10.50/24D	13.50/24	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Ow TF4:A3	12	T-W 79742-W	2F	R	9.3-10.1	Tim 27452	TW4IA	739	1050	e	FD	90	10½x3x⅞	L
21	.....(N) NFS	.....	5600	195	195	.....	10450	10.50/24D	10.50/20	Own 408	6-4¼x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own DF5	5	Own TF	2F	H	7.20-8.57	Tim 26452	LO4IDV	580	930	e	FD	119½	9x3x¼	T
22	.....(N) TS	.....	6600	204	204	.....	11404	10.50/24D	10.50/24	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own TF4	5	Own TG	2F	H	7.20-8.68	Tim 26452	TO4IA	739	1050	e	FD	129	10½x3x⅞	P
23	c.o.e. U-10	.....	1350	84	142	.....	4560	6.50/20D	8.25/20	Her JXB	6-3⅛x4¼	263	5.8	184	73-2300	7-2½x10½	Y	Cla 185F	4	Tim 54412	SF	H	5.83-6.8	Tim 31015	L4IHV	328	528	e	TD	62	8x2¾x¼	T
24	c.o.e. U-20	.....	1725	84	142	.....	5130	6.50/20D	9.00/20	Her JXC	6-3¾x4¾	282	5.8	197	78-2300	7-2½x10½	Y	Cla 200VO	5	Tim 56410	SF	H	6.16-7.4	Tim 32502	L4IHV	358	578	e	TD	62	8x2¾x¼	T
25	c.o.e. U-30	.....	2300	96	142	.....	6270	7.00/20D	9.00/20	Own 315	6-3¾x4¾	315	5.5	220	81-2400	7-3x12⅝	Y	Cla 200VO	5	Tim 56400	SF	H	6.16-7.4	Tim 35000	L4IHV	402	659	e	TD	74	9x3x¼	T
26	c.o.e. (N) U-40	.....	3050	106	142	.....	6910	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own URL5	5	Own RL	2F	H	6.49-7.89	Tim 35000	LO4IDV	466	694	e	2I	84	9x3x¼	T
27	c.o.e. (T) U-40-T	.....	3200	96	106	.....	7170	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own URL5	5	Own DB	2F	H	6.49-7.89	Tim 35000	LO4IDV	466	694	e	2I	74	9x3x¼	T
28	c.o.e. (d) U-40-D	.....	3300	96	96	.....	7070	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own URL5	5	Own DB	2F	H	6.49-7.89	Tim 35000	LO4IDV	466	694	e	2I	74	9x3x¼	T
29	c.o.e. (N) U-50	.....	3435	106	142	.....	7440	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own URL5	5	Own DB	2F	H	6.49-7.89	Tim 35000	LO4IDV	466	694	e	2I	84	9x3x¼	T
30	e.u.s. (N) U-60	.....	3800	109	145	.....	8450	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own UDF5	5	Own DB	2F	H	6.49-7.89	Tim 35100	LO4IDV	479	793	e	2I	84¼	8x3x¼	T
31	e.u.s. (T) U-60-T	.....	4500	98	109	.....	8860	9.00/20D	9.75/20	Own 408	6-4¼x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own UDF5	5	Own C	2F	H	7.85-8.57	Tim 35000	LO4IDV	567	831	e	2I	73¼	8x3x¼	T
32	e.u.s. (d) U-60-D	.....	4400	100	100	.....	8880	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	89-2400	7-3x12⅝	Y	Own UDF5	5	Own C	2F	H	7.85-8.57	Tim 26452	LO4IDV	580	930	e	2I	75¼	8x3x¼	T
33	e.u.s. (N) U-70	.....	5000	109	163	.....	8770	9.75/20D	10.50/20	Own 408	6-4¼x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own UDF5	5	Own C	2F	H	7.2 -8.57	Tim 26452	LO4IDV	580	930	e	FD	84¼	8x3x¼	T
34	e.u.s. (T) U-70-T	.....	5000	98	109	.....	8880	9.00/20D	10.50/20	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own UDF5	5	Own C	2F	H	7.2 -8.57	Tim 35000	LO4IDV	567	831	e	FD	73¼	8x3x¼	T
35	e.u.s. (N) U-80	.....	5400	128	163	.....	10250	10.50/20D	10.50/24	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own UTF5	5	Own TG	2F	H	7.2 -8.57	Tim 26452	LO4IDV	631	930	e	FD	103¼	9x3x¼	T
36	e.u.s. (T) U-80-T	.....	5450	98	109	.....	9970	9.75/20D	10.50/20	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own UTF5	5	Own CG	2F	H	7.69-8.52	Tim 26452	LO4IDV	580	930	e	FD	73¼	8x3x¼	T
37	e.u.s. (d) U-80-D	.....	5850	109	120	.....	10550	10.50/20D	10.50/24	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Fu 5A62	5	Own CGA	2F	H	7.69-8.52	Tim 26452	LO4IDV	631	930	e	2I	84¼	9x3x¼	T
38	e.u.s. (N) U-90	.....	6000	128	163	.....	10910	10.50/20D	11.25/20	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Own UTF5	5	Own TG	2F	H	7.20-8.68	Tim 26452	TO4IA	631	930	e	FD	103¼	9x3x¼	T
39	e.u.s. (T) U-90-T	.....	6000	98	109	.....	10260	10.50/20D	11.25/20	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Own UTF5	5	Own CG	2F	H	7.69-8.52	Tim 26452	TO4IA	631	930	e	FD	73¼	9x3x¼	T
40	e.u.s. (d) U-90-D	.....	6850	109	120	.....	.	10.50/24D	11.25/24	Own 501	6-4½x5¼	501	5.5	375	127-2300	7-3¼x13.76	Y	Fu 5A62	5	Tim 79742-W	2F	R	8.59-10.1	Tim 27452	TW4IA	739	1050	e	2I	84¼	10½x3x⅞	P
41	e.u.s. (N) UNFS	.....	5600	145	145	.....	9585	10.50/20D	10.50/20	Own 408	6-4¼x5¼	408	5.5	295	110-2400	7-3¼x13.76	Y	Own UDF4	4	Own TF	2F	H	7.20-8.57	Tim 26452	LO4IDV	637	930	e	FD	120¼	9x3x¼	P
42	e.u.s. (N) UTS	.....	6600	145	145	.....	10927	10.50/24D	10.50/24	Own 447	6-4¼x5¼	447	5.5	333	116-2400	7-3¼x13.76	Y	Own UTF4	4	Own TG	2F	H	7.20-8.68	Tim 26452	TO4IA	631	930	e	FD	120¼	10½x3x⅞	P
♦ 43	Avail- (12) P-105 ¾-1	.....	1035	Op	Op	8500	2425	6.00/18S	6.50/20	Wau FC	4-3¼x4	133	5.6	93	36-2800	3-2⅛x3⅛	N	WG T9	4	Tim 53508	SF	H	**-6.6	Tim 30000H	L4IH	266	427	a	TX	Opt	4x2x¼	T
♦ 44	able..... X-110 1½-4	.....	1385	Op	Op	11500	3900	6.50/20D	6.50/20	Wau ZKA	6-3⅜x4½	221	5.6	154	66-2900	4-2⅛x5⅝	N	WG T9	4	Tim 53508	SF	H	**-6.6	Tim 30000H	L4IH	266	427	a	TX	Opt	8x3x¼	T
♦ 45	..... X-120 2-4½	.....	1575	Op	Op	12500	4100	7.00/20D	7.00/20	Wau ZKA	6-3⅜x4½	221	5.6	154	66-2900	4-2⅛x5⅝	N	WG T9	4	Tim 53308	SF	H	**-6.6	Tim 30000H	L4IH	303	503	a	TX	Opt	10x3x¼	T
♦ 46	..... X-140 2-5	.....	1640	Op	Op	14000	4300	7.00/20D	7.00/20	Wau BL	6-3½x4¾	245	5.7	165	73-3000	7-2⅝x10¼	N	WG T9	4	Tim 53308	SF	H	**-6.6	Tim 31000H	L4IH	303	503	a	TX	Opt	10x3x¼	T
♦ 47	..... X-170 2½-5½	.....	1840	Op	Op	16000	4800	7.50/20D	7.50/20	Wau BM	6-3⅝x4¾	263	5.7	178	78-3100	7-2⅝x10¼	N	WG T9	4	Tim 54411	SF	H	**-6.8	Tim 31000H	L4IH	330	582	a	TX	Opt	10x3x¼	T
♦ 48	..... X-220 3-6	.....	1930	Op	Op	17000	4900	7.50/20D	7.50/20	Wau BK	6-3¾x4¾	282	5.7	188	85-3200	7-2⅝x10¼	N	Spl 2341	4	Tim 54411	SF	H	**-6.8	Tim 32502H	L4IH	330	582	a	TX	Opt	10x3x¼	T
♦ 49	..... X-250 3½-7	.....	2230	Op	Op	19000	5500	8.25/20D	8.25/20	Wau BZ	6-4x4¼	320	5.7	210	86-2800	7-2⅝x10¼	Y	Fu 5A33D	4	Tim 56410	SF	R	**-7	Tim 32502H	L4IH	330	582	a	TX	Opt	12x3x¼	T
♦ 50	..... X-280 4-8	.....	2600	Op	Op	21000	6100	9.00/20D	9.00/20	Wau BZ	6-4x4¼	320	5.7	210	86-2800	7-2⅝x10¼	Y	Fu 5A330	5	Tim 58305	SF	R	**-7.8	Tim 33000A	L4IH	376	660	a	TX	Opt	12x3x¼	T
♦ 51	..... X-310 4½-8	.....	3050	Op	Op	21000	6800	9.00/20D	9.00/20	Wau MZR	6-4¼x4¾	404	5.6	290	99-2800	7-2⅝x12½	Y	Fu 5-A-430	5	Tim 58305	SF	R	**-7.8	Tim 35000H	L4IH	376	660	a	TX	Opt	12x3x¼	T
♦ 52	..... X-410 5-10	.....	3940	Op	Op	26500	8000	9.75/20D	9.75/20	Wau SRKR	6-4½x5⅛	517	5.5	365	126-2300	7-3x13⅞	Y	Fu 5-A-620	5	Tim 65725H	WF	R	**-8.50	Tim 35000H	L4IH	462	768	a	TD	Opt	14x3x⅞	T
53	Bantam..... ¼	.....	349	75	75	1700	850	5.00/15S	.....	Own	4-2.2x3	45	7.1	...	20-4000	2-2½x2½	N	WG	3	Spi	S	H	**-5.87	Spi 10	O4IM	76	104	P	4I	75	8x2⅞x.109	....
54	Brockway..... 78 1½-2	.....	895	138	164	.....	3965	6.00/20D	32x6	Con 24B	6-3⅛x4⅜	210	5.7	154	71-3100	4-2¼x6	N	WG T9	4	Tim 53521H	SF	H	5.66-6.6	Tim 30000H	L4IH	255	402	a	TX	65⅞	7⅜x3x⅛	T
♦ 55	83 1½-2½	.....	1195	138	170	.....	4100	6.50/20D	7.50/20	Con 25B	6-3⅛x4⅝	244	5.4	171	84-3250	4-2⅝x6⅛	N	WG T9	4	Tim 53521H	SF	H	5.66-6.6	Tim 30000H	L4IHV	255	402	a	TX	65⅞	7⅜x3x⅛	T
♦ 56	88 1½-3	.....	1290	150	176	.....	4500	6.50/20D	7.50/20	Con 25B	6-3⅛x4⅝	244	5.4	171	84-3250	4-2⅝x6⅛	N	WG T9	4	Tim 53307H	SF	H	6.2 -6.8	Tim 31000H	L4IHV	298	477	a	TX	71⅞	7⅜x3x⅛	T
♦ 57	92 1½-4	.....	1560	150	188	.....	4700	7.00/20D	8.25/20	Con 25B	6-3⅛x4⅝	244	5.4	171	84-3250	4-2⅝x6⅛	N	WG T9	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	83⅞	8x3x¼	T
♦ 58	94 1½-5	.....	1850	156	188	.....	5050	7.50/20D	8.25/20	Con 25B	6-3⅛x4⅝	244	5.4	171	84-3250	4-2⅝x6⅛	N	BL B341	4	Tim 56410H	SF	H	6.16-7.4	Tim 31000H	L4IHV	329	580	a	CD	83⅞	8x3x¼	T
59	96 2½-3	.....	1740	156	176	.....	5150	7.00/20D	8.25/20	Con 29B	6-3⅛x4½	288	5.4	192	78-2650	7-2⅝x13	N	BL B341	4	Tim 53307H	SF	H	5.83-6.8	Tim 31000H	L4IHV	302	528	a	CD	83⅞	7⅜x3x⅛	T
60	110 3	.....	1900	156	188	.....	5490	7.50/20D	8.25/20	Con 29B	6-3⅛x4½	288	5.4	192	78-2650	7-2⅝x13	N	BL B341	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	83⅞	8x3x¼	T
♦ 61	112 3	.....	1710	150	188	.....	5150	7.00/20D	8.25/20	Con 38B	6-3¾x4½	290	5.6	205	87-2800	7-2⅝x12	N	BL B341	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	77⅞	8x3x¼	T
62	125X 3	.....	2075	164	188	.....	5570	7.50/20D	8.25/20	Con 31B	6-3½x4½	318	5.5	214	86-2600	7-2⅝x13	N	BL B341	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	91⅞	8x3x¼	T
♦ 63	128 3½-4	.....	1950	156	188	.....	5550	7.50/20D	8.25/20	Con 38B	6-3¾x4½	290	5.6	205	87-2800	7-2⅝x12	N	BL B341	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	83⅞	8x3x¼	T
64	130 3½-4	.....	2245	164	206	.....	6270	8.25/20D	9.00/20	Con 29B	6-3⅛x4½	288	5.4	192	78-2650	7-2⅝x13	N	BL B341	4	Tim 56410H	SF	R	6.16-7.4	Tim 32505H	L4IHV	329	580	a	CD	103⅞	8x3x¼	T
65	145 3½-4	.....	2385	176	206	.....	6390	8.25/20D	9.00/20	Con 31B	6-3½x4½	318	5.5	214	86-2600	7-2⅝x13	N	BL B341	4	Tim 56410H	SF	R	6.16-7.4	Tim 32505H	L4IHV	329	580	a	CD	103⅞	8x3x¼	T
66	150X-4 4	.....	2680	176	206	.....	6520	8.25/20D	9.00/20	Con 32B	6-4¼x4½	361	5.4	252	95-2500	7-2⅝x13	Y	BL 3241	4	Tim 56410H	SF	R	5.71-7.4	Tim 32505H	L4IHV	329	580	a	CD	103⅞	8x3x¼	T
67	150X-5 4	.....	2710	176	206	.....	6570	8.25/20D	9.00/20	Con 32B	6-4¼x4½	361	5.4	252	95-2500	7-2⅝x13	Y	Fu 5-A-43	5	Tim 56410H	SF	R	5.71-7.4	Tim 32505H	L4IHV	329	580	a	CD	103⅞	8x3x¼	T
68	130-PS 4-4½	.....	2525	164	206	.....	6250	34x7D	9.00/20	Con 29-B	6-3⅛x4½	288	5.4	192	78-2650	7-2⅝x13	N	Fu 5-A-43	5	Tim 56200H	SF	R	6.16-7.4	Tim 32505B	L4IHV	329	580	a	CD	91⅞	8x3x¼	B
69	160X 4-5	.....	3295	153	219	.....	7350	9.00/20D	9.75/22	Con 32B	6-4¼x4½	361	5.4	252	95-2500	7-2⅝x13	Y	Fu 5-A-43	5	Tim 58205H	SF	R	6.14-7.8	Shu 15685B1	L4IHV	396	663	a	CD	83⅞	8¼x3x⅞	T
70	170X 4-5	.....	3640	153	219	.....	7960	9.00/20D	9.75/22	Con 33B	6-4¼x4¼	381	4.7	276	106-2600	7-2¾x13⅞	Y	Fu 5-A-62	5	Wis 72000L	2F	R	5.00-8.40	Shu 15685B1	L4IHV	396	663	a	CD	83⅞	8¼x3x⅞	T
♦ 71	..... 165X 5-7	.....	3795	153	219	.....	8150	9.75/20D	10.50/22	Con 32B	6-4¼x4¼	361	5.4	252	95-2500	7-2¾x13	Y	Fu 5-A-43	5	Wis 1337BH	2F	R	5.63-8.59	Shu 15685B1	L4IHV	484	772	a	CD	83⅞	8¼x3x⅞	T
♦ 72	..... 175X 5-7½	.....	4290	153	219	.....	8550	9.00/20D	10.50/22	Con 34B	6-4⅜x4¼	427	4.6	308	118-2600	7-2¾x13⅞	Y	Fu 5-A-62	5	Wis 1337BH	2F	R	5.63-8.59	Shu 15685B1	L4IHV	484	772	a	CD	83⅞	8¼x3x⅞	T
♦ 73	..... 195X 5-7½	.....	4230	153	219	.....	8650	9.75/20D	10.50/22	Con 33B	6-4¼x4¼	381	4.7	276	106-2600	7-2¾x13⅞	Y	Fu 5-A-62	5	Wis 1337BH	2F	R	5.63-8.59	Shu 15685B1	L4IHV	484	772	a	CD	83⅞	8¼x3x⅞	T
♦ 74	..... 220X 7½-10	.....	4930	153	219	.....	9050	10.50/20D	11.25/24	Con 34B	6-4⅜x4¼	427	4.6	308	118-2600	7-2¾x13⅞	Y	Fu 5-A-62	5	Wis 1757H	2F	R	6.03-8.23	Shu 15695B1	L4IHV	536	899	a	CD	83⅞	8¼x3x⅝	T
♦ 75	..... 240X 6-7½	.....	5130	153	219	.....	8590	9.75/20D	10.50/24	Con 35B	6-4½x5¼	501	4.5	364	135-2200	7-2¾x13⅞	Y	Fu MHU	4	Wis 1337BH	2F	R	5.63-8.59	Shu 15685B1	L4IHV	484	772	a	CD	83⅞	8¼x3x⅞	T
♦ 76	..... 260X 10	.....	6030	195	219	.....	9720	10.50/22D	11.25/24	Con 35B	6-4½x5¼	501	4 5	364	135-2200	7-2¾x13⅞	Y	Fu MHU	4	Wis 1757H	2F	R	6.03-8.23	Shu 15695B1	L4IHV	536	899	a	CD	125⅞	8¼x3x⅝	B
♦ 77	..... 2608 10	.....	6380	195	219	.....	10000	10.50/24D	11.25/24	Con 35B	6-4½x5¼	501	4 5	364	135-2200	7-2¾x13⅞	Y	Fu MHU	4	Wis 1757H	2F	R	6.03-8.23	Shu 15695B1	Lw4IDV	600	899	a	CD	125⅞	8¼x3x⅝	B
78	Chev- (x) Mas. JC ½	.....	450	113	113	.....	2240	6.00/16S	15-6	Own	6-3½x3¾	216	6.2	170	78-3200	4-2¼x5	N	Own	3	Own	S	U	4 11-3.82	Own	O4IH	158	288	a	2I	38¼	5⅜x2¼x⅞	C
79	rolet (x) Mas. JD ¾	.....	528	123	123	5200	2415	15-6S	15-6	Own	6-3½x3¾	216	6.2	170	78-3200	4-2¼x5	N	Own	3	Own	S	U	**-4.11	Own	O4IH	158	288	a	2I	48¼	5⅜x2¼x⅞	C
80	.....(x) Mas. VA 1	.....	552	133	133	6700	3020	6.00/20S	6.00/20S	Own	6-3½x3¾	216	6.2	170	78-3200	4-2¼x5	N	Own	4	Own	SF	U	5.43-6.17	Own	O4IH	330	532	P	2I	57¾	7x2¾x⅜	C
81	▲.....(x) Mas. VA 1½	.....	568	138	138	7700	3050	6.00/20S	32x6S-8P	Own	6-3½x3¾	216	6.2	170	78-3200	4-2¼x5	N	Own	4	Own	SF	U	5.43-6.17	Own	O4IH	330	532	P	2I	57¾

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Line Number	MAKE AND MODEL	GENERAL (See Keynote)					TIRE SIZES (D-dual rear, S-single rear)		ENGINE DETAILS								TRANS-MISSION	REAR AXLE				FRONT AXLE	BRAKES					C-A Dimension (Std. W. B.)	FRAME	
		Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	Standard Front and Rear	Maximum Tire Size Furnished	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	Make and Model	Forward Spd's	Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	Make and Model	SERVICE: Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type		Side Rail Dimensions	Type
1	Fargo...(E) FXH-1	.....	494	116	116	4550	.....	6.00/16S	6.00/16S	Own	6-3 1/4 x4 3/4	201	6.7	148	70-3000	4-2 1/4 x5 1/2	N	NP 36700	3	Own	Hy	H	3.70-4.78	Own	O41H	148	251	C	TX	40 1/2	6x2x1/4	C
2	.....(E) FXH-2	.....	594	120	133	6300	.....	7.00/16††S	7.50/16S	Own	6-3 1/4 x4 3/4	217	6.5	158	77-3000	4-2 1/2 x5 1/2	N	NP 36710	3	Own	S	H	3.90-4.78	Own	O41H	190	293	A	TX	44 1/2	6 1/4 x2 1/2 x 1/4	C
3	.....(E) FXH-3	.....	738	126	160	11100	.....	7.00/20D	7.00/20	Own	6-3 1/4 x4 1/4	218	5.8	150	73-3000	4-2 1/2 x5 1/2	N	NP 36750	4	Own	SF	H	4.80-5.80	Own	O41H	191	310	A	TX	51 1/2	6 1/2 x2 1/2 x 1/4	CX
4	.....(E) FXH-4	.....	818	126	190	13500	.....	32x6D	32x6	Own	6-3 1/4 x4 1/4	228	5.8	158	78-3000	4-2 1/2 x5 1/2	N	NP 36760	4	Own	SF	H	5.10-6.30	Own	O41H	262	406	A	TX	51 1/2	7 1/2 x2 1/2	CX
5	.....(E) FXHD-4	.....	959	182	182	13500	.....	7.50/20D	7.50/20	Own	6-3 1/4 x4 1/4	228	5.8	158	78-3000	4-2 1/2 x5 1/2	N	NP 36760	4	Own	SF	H	5.10-6.30	Own	O41H	262	406	A	TX	.....	8 1/2 x2 1/2 x 1/4	.....
6	.....(E) FXH-6	.....	1170	136	220	16850	.....	34x7D	34x7	Own	6-3 1/4 x4 1/2	242	5.6	175	85-3000	4-2 1/2 x5 1/2	Y	Cla 200V	5	Own	HyF	H	5.10-7.10	Own	O41HV	321	502	A	TX	60 1/2	8 1/2 x2 1/2 x 1/4	CX
7	.....(E) FH-1	.....	472	116	116	4000	.....	6.00/16S	6.50/16S	Own	6-3 1/4 x3 1/2	201	6.7	148	70-3000	4-2 1/4 x5 1/2	N	NP 36700	3	Own	Hy	H	3.70-4.78	Own	O41H	148	251	C	TX	40 1/2	6x2 1/2	C
8	.....(E) FH-15	.....	542	120	120	5000	.....	7.00/15S	7.00/15S	Own	6-3 1/4 x4 1/4	217	6.5	158	77-3000	4-2 1/2 x5 1/2	N	NP 36710	3	Own	S	H	3.90-4.78	Own	O41H	190	293	A	TX	44 1/2	6 1/2 x2 1/2 x 1/4	C
9	.....(E) FH-2	.....	587	120	133	6000	.....	7.00/16††S	7.50/16S	Own	6-3 1/4 x4 1/4	217	6.5	158	77-3000	4-2 1/2 x5 1/2	N	NP 36710	3	Own	S	H	3.90-4.78	Own	O41H	190	293	A	TX	44 1/2	6 1/2 x2 1/2 x 1/4	C
10	.....(E) FH-3	.....	597	126	160	10000	.....	6.00/20†S	32x6	Own	6-3 1/2 x4 1/4	218	5.8	150	73-3000	4-2 1/2 x5 1/2	N	NP 36750	4	Own	SF	H	4.80-5.80	Own	O41H	191	310	A	TX	51 1/2	6 1/2 x2 1/2 x 1/4	CX
11	.....(E) FH-4	.....	637	126	190	12000	.....	6.00/20†S	32x6	Own	6-3 1/2 x4 1/4	228	5.8	158	78-3000	4-2 1/2 x5 1/2	N	NP 36760	4	Own	SF	H	5.10-6.30	Own	O41H	262	406	A	TX	51 1/2	7 1/2 x2 1/2	CX
12	.....(E) FHD-4	.....	939	182	182	12000	.....	7.50/20D	7.50/20	Own	6-3 1/2 x4 1/4	228	5.8	158	78-3000	4-2 1/2 x5 1/2	N	NP 36760	4	Own	SF	H	5.10-6.30	Own	O41H	262	406	A	TX	.....	8 1/2 x2 1/2 x 1/4	.....
13	.....(E) FH-6	.....	992	136	220	14000	.....	7.00/20D	34x7	Own	6-3 1/2 x4 1/2	242	5.6	175	85-3000	4-2 1/2 x5 1/2	Y	Cla 200V	5	Own	HyF	H	5.10-7.10	Own	O41HV	321	502	A	TX	60 1/2	8 1/2 x2 1/2 x 1/4	CX
14	...(D) (E) FGZ-6	.....	2468	133	220	15000	.....	7.00/20D	34x7	Her DJXC	6-3 3/4 x4 1/2	298	14	178	77-2600	7-3x8 1/2	Y	Cla 200V	5	Own	SF	H	5.10-6.30	Own	O41HV	321	502	A	TX	57 1/2	8 1/2 x2 1/2 x 1/4	CX
15	Federal.....7	3/4	595	111	128	.....	2425	6.00/16S	7.50/17S	Con F4140	4-3 1/4 x4 3/4	140	6.0	107	52-2500	3-2 1/4 x4 1/2	N	WG-T89	3	Tim 51521H	SF	H	**-6.67	Tim 29500H	L41H	210	308	a	TX	43 1/4	6x2 1/4 x 1/4	T
16	8	3/4	595	111	128	.....	2500	6.00/16S	7.50/17S	Her QXB3F	6-3 1/4 x4 1/4	205	5.9	160	72-3500	7-2 1/2 x10 1/2	N	WG-T89	3	Tim 51521H	SF	H	**-4.86	Tim 29500H	L41H	210	308	a	TX	43 1/2	6x2 1/4 x 1/4	T
17	9	3/4-1	695	105	121	.....	2850	6.00/20S	6.00/20	Con F4140	4-3 1/4 x4 3/4	140	6.0	107	52-2500	3-2 1/4 x4 1/2	N	WG T9	4	Tim 53563H	SF	H	5.14-7.20	Tim 30020H	L41H	261	388	a	TX	35 1/2	6 1/2 x2 1/2 x 1/4	T
18	11	1 1/2-2	655	127	164	.....	3450	6.00/20S	7.00/20	Her QXB3F	6-3 1/4 x4 1/4	205	5.9	160	72-3500	7-2 1/2 x10 1/2	N	WG T9	4	Tim 53563H	SF	H	5.14-6.20	Tim 30020H	L41H	261	388	a	TX	51 1/2	7x2 1/2 x 1/2	T
19	12	1 1/2-2	680	127	164	.....	3450	6.00/20S	7.50/20	Her QXC3F	6-3 1/2 x4 1/4	221	5.5	170	76-3500	7-2 1/2 x10 1/2	N	WG T9	4	Tim 53563H	SF	H	5.14-6.20	Tim 30020H	L41H	261	388	a	TX	51 1/2	7x2 1/2 x 1/2	T
20	14	1 1/2-2	735	127	164	.....	3500	6.00/20S	7.50/20	Her QXC3F	6-3 1/2 x4 1/4	221	5.5	170	76-3500	7-2 1/2 x10 1/2	Y	WG T9	4	Tim 53521H	SF	H	5.14-6.66	Tim 30000H	L41H	255	402	a	TX	51 1/2	7x2 1/2 x 1/2	T
21	(14).....15	1 1/2-3	795	135	250	.....	4230	6.00/20†S	7.50/20	Her JXAF	6-3 1/2 x4 1/4	228	5.9	175	72-3000	7-2 1/2 x10 1/2	Y	WG T9	4	Tim 53308H	SF	H	5.14-6.66	Tim 30000H	L41H	299	478	a	TX	56 3/4	8 1/4 x2 1/4 x 1/4	T
22	(14).....18	2-3 1/2	945	135	250	.....	4350	6.00/20D	8.25/20	Her JXBF	6-3 1/2 x4 1/4	263	6.1	200	82-3000	7-2 1/2 x10 1/2	Y	WG T9	4	Tim 53308H	SF	H	5.14-6.66	Tim 30003H	L41HV	302	528	a	TX	56 3/4	8 1/4 x2 1/4 x 1/4	T
23	(14).....20	2-4	1150	135	250	.....	4850	6.50/20D	8.25/20	Her JXB F	6-3 1/2 x4 1/4	263	6.1	200	82-3000	7-2 1/2 x10 1/2	Y	WG T9	4	Tim 54411H	SF	H	5.83-6.80	Tim 31000H	L41HV	330	578	a	TX	56 3/4	8 1/4 x2 1/4 x 1/4	T
24	(14).....25	2 1/2-4 1/2	1450	135	250	.....	5550	7.00/20D	9.00/20	Her JXC F	6-3 1/2 x4 1/4	282	5.9	216	86-3000	7-2 1/2 x10 1/2	Y	Cla 185F	4	Tim 55411H	SF	H	5.71-7.40	Tim 31000H	L41HV	330	578	a	TX	56 3/4	8 1/4 x2 1/4 x 1/4	T
25	(14).....29	3-5	1850	135	250	.....	5660	7.50/20D	9.75/20	Her JXD F	6-4x4 1/4	320	5.9	244	95-2800	7-2 1/2 x10 1/2	Y	Cla 205V	5	Tim 58301H	SF	H	6.83-7.80	Tim 32514H	L41HV	504	844	a	TX	56 3/4	8 1/4 x2 1/4 x 1/4	T
26	(14).....29H	3-5 1/2	2080	135	250	.....	6000	8.25/20D	9.75/20	Her JXD F	6-4x4 1/4	320	5.9	244	95-2800	7-2 1/2 x10 1/2	Y	Cla 270V	5	Tim 58301H	SF	H	5.57-7.80	Tim 33000H	L41HV	504	844	a	TX	60	10 1/2 x3 1/2 x 1/4	T
27	(14).....40	4-6	2800	135	250	.....	7200	9.00/20D	10.50/20	Wau 6MKRF	6-4 1/2 x4 3/4	381	5.0	290	105-2600	7-2 5/8 x12 1/2	Y	Cla 270V	5	Wis 72301H	2F	H	6.36-7.27	Tim 33000H	L41HV	504	844	a	TX	60	10 1/2 x3 1/2 x 1/4	T
28	42	4-6	2960	135	250	.....	7700	9.00/20D	10.50/20	Wau 6MKRF	6-4 1/2 x4 3/4	381	5.0	290	105-2600	7-2 5/8 x12 1/2	Y	Cla 270V	5	Wis 72301H	2F	H	6.36-7.27	Tim 33000H	L41HV	504	844	a	TX	60	10 1/2 x3 1/2 x 1/4	T
29	(14).....50	5-6 1/2	3375	135	250	.....	7900	9.00/20D	10.50/20	Wau 6MZRF	6-4 1/2 x4 3/4	404	5.4	307	108-2600	7-2 5/8 x12 1/2	Y	Cla 270V	5	Tim 75733H	2F	R	6.85-9.41	Tim 35011H	L41HV	504	844	a	FD	60	10 1/2 x3 1/2 x 1/4	T
30	(14).....50H	5-7 1/2	3855	135	250	.....	8300	9.75/20D	10.50/20	Wau 6MZRF	6-4 1/4 x4 3/4	404	5.4	307	108-2600	7-2 5/8 x12 1/2	Y	Cla 270V	5	Tim 76736H	2F	R	7.35-9.20	Tim 35011H	L41HV	504	844	a	FD	60	10 1/2 x3 1/2 x 1/4	T
31	62	6-7 1/2	5675	141	211	.....	10400	10.50/20D	11.25/24	Con 22RF	6-4 1/2 x5 1/2	501	4.5	385	139-2400	7-2 3/4 x14 1/2	Y	Cla 326VO	5	Tim 76746W	2F	R	7.89-9.20	Tim36000TW	Ws41A	620	921	a	TD	60	10 1/4 x3 1/2 x 1/4	TF
32	63	6-7 1/2	5675	141	211	.....	10250	10.50/20D	11.25/24	Wau 6SRKRF	6-4 3/8 x5 1/2	517	5.5	400	133-2500	7-3x13 1/4	Y	Cla 326VO	5	Tim 76746W	2F	R	7.89-9.20	Tim36000TW	Ws41A	620	921	a	TD	60	10 1/4 x3 1/2 x 1/4	TF
33	65	6-8	6425	141	211	.....	11300	10.50/24D	11.25/24	Con 22RF	6-4 1/2 x5 1/2	501	4.5	385	139-2400	7-2 3/4 x14 1/2	Y	Cla 326VO	5	Tim 79733W	2F	R	8.59-10.11	Tim36000TW	Ws41A	724	1051	a	TD	60	10 1/4 x3 1/2 x 1/4	TF
34	66	6-8	6425	141	211	.....	11150	10.50/24D	11.25/24	Wau 6SRKRF	6-4 3/8 x5 1/2	517	5.5	400	133-2500	7-3x13 1/4	Y	Cla 326VO	5	Tim 79733W	2F	R	8.59-10.11	Tim36000TW	Ws41A	724	1051	a	TD	60	10 1/4 x3 1/2 x 1/4	TF
35	(14)...(c.o.e.) 75	1 1/2-3	930	104	215	.....	4280	6.00/20†S	7.50/20	Her JXAF	6-3 1/2 x4 1/4	228	5.9	175	72-3000	7-2 1/2 x10 1/2	Y	WG T9	4	Tim 53308H	SF	H	5.14-6.66	Tim 31100H	L41H	299	478	a	TX	60	8 1/4 x2 1/4 x 1/4	T
36	(14)...(c.o.e.) 80	2-4	1260	104	215	.....	4900	6.50/20D	8.25/20	Her JXBF	6-3 1/2 x4 1/4	263	6.1	200	82-3000	7-2 1/2 x10 1/2	Y	WG T9	4	Tim 54411H	SF	H	5.83-6.80	Tim 31102H	L41HV	330	578	a	TX	60	8 1/4 x2 1/4 x 1/4	T
37	(14)...(c.o.e.) 85	2 1/2-4 1/2	1565	104	215	.....	5600	7.00/20D	9.00/20	Her JXCF	6-3 1/2 x4 1/4	282	6.1	216	86-3000	7-2 1/2 x10 1/2	Y	Cla 185F	4	Tim 55411H	SF	H	5.71-7.40	Tim 32515H	L41HV	374	654	a	TX	60	8 1/4 x2 1/4 x 1/4	T
38	(14)...(c.o.e.) 89	3-5	1945	104	215	.....	5720	7.50/20D	9.75/20	Her JXDF	6-4x4 1/4	320	5.9	244	95-2800	7-2 1/2 x10 1/2	Y	Cla 205V	5	Tim 56411H	SF	H	6.16-7.40	Tim 32515H	L41HV	415	735	a	TX	60	8 1/4 x2 1/4 x 1/4	T
39	(14)...(c.o.e.) 89H	3-5 1/2	2175	104	215	.....	6050	8.25/20D	9.75/20	Her JXDF	6-4x4 1/4	320	5.9	244	95-2800	7-2 1/2 x10 1/2	Y	Cla 205V	5	Tim 58301H	SF	H	6.83-7.80	Tim 32515H	L41HV	504	844	a	TX	60	8 1/4 x2 1/4 x 1/4	T
40	.....(E) 15	1 1/2-3	880	155	194	14000	4230	32x6S	7.50/20	Her JXAF	6-3 1/2 x4 1/4	228	5.9	175	72-3000	7-2 1/2 x10 1/2	Y	WG T9	4	Tim 53308H	SF	H	5.14-6.66	Tim 30000H	L41H	299	478	a	TX	76	8 1/4 x2 1/4 x 1/4	T
41	.....(E) 18	2-3 1/2	1250	167	194	15000	4350	32x6D	8.25/20	Her JXBF	6-3 1/2 x4 1/4	263	6.1	200	82-3000	7-2 1/2 x10 1/2	Y	WG T9	4	Tim 53308H	SF	H	5.14-6.66	Tim 30003H	L41HV	302	528	a	TX	88	8 1/4 x2 1/4 x 1/4	T
42	.....(E) 20	2-4	1455	167	194	17500	4850	34x7D	34x7	Her JXBF	6-3 1/2 x4 1/4	263	6.1	200	82-3000	7-2 1/2 x10 1/2	Y	WG T9	4	Tim 54411H	SF	H	5.83-6.80	Tim 31000H	L41HV	330	578	a	TX	88	8 1/4 x2 1/4 x 1/4	T
43	.....(E) 25	2 1/2-4 1/2	1790	167	194	19000	5550	8.25/20D	9.00/20	Her JXCF	6-3 1/2 x4 1/4	282	5.9	216	86-3000	7-2 1/2 x10 1/2	Y	Cla 185F	4	Tim 55411H	SF	H	5.71-7.40	Tim 31000H	L41HV	330	578	a	TX	88	8 1/4 x2 1/4 x 1/4	T
44	.....(E) 29	3-5	2130	180	194	20000	5660	8.25/20D	9.75/20	Her JXDF	6-4x4 1/4	320	5.9	244	95-2800	7-2 1/2 x10 1/2	Y	Cla 205V	5	Tim 56411H	SF	H	6.16-7.40	Tim 32514H	L41HV	415	735	a	TX	101	8 1/4 x2 1/4 x 1/4	T
45	.....(E) 29H	3-5 1/2	2365	194	194	22500	6000	8.25/20D	9.75/20	Her JXDF	6-4x4 1/4	320	5.9	244	95-2800	7-2 1/2 x10 1/2	Y	Cla 205V	5	Tim 58301H	SF	H	6.83-7.80	Tim 32514H	L41HV	504	844	a	TX	115	8 1/4 x2 1/4 x 1/4	T
46	Ford Regular..91T	.....	580	134	.....	.....	3200	6.00/20†S	7.50/20	Own	8-3 1/8 x3 3/4	221	...	150	85-3800	3-2 .5x4.7	N	Own	4	Own	FS	U	5.14-6.67*	Own	O41H	303	506	a	2I	60	7x2 3/4 x .21	C
47	Regular....99T	.....	605	134	.....	.....	3210	6.00/20†S	7.50/20	Own	8-3 1/8 x3 3/4	239	...	170	95-3600	3-2 .5x4.7	N	Own	4	Own	FS	U	5.14-6.67*	Own	O41H	303	506	a	2I	60	7x2 3/4 x .21	C
48	Regular....917T	.....	605	157	191	.....	3260	6.00/20†S	7.50/20	Own	8-3 1/8 x3 3/4	221	...	150	85-3800	3-2 .5x4.7	N	Own	4	Own	FS	U	5.14-6.67*	Own	O41H	303	506	a	2I	83	7x2 3/4 x .21	C
49	Regular....997T	.....	630	157	191	.....	3270	6.00/20†S	7.50/20	Own	8-3 1/8 x3 3/4	239	...	170	95-3600	3-2 .5x4.7	N	Own	4	Own	FS	U	5.14-6.67*	Own	O41H	303	506	a	2I	83	7x2 3/4 x .21	C
50	COE.....911W	.....	770	101	.....	.....	3250	6.00/20†S	7.50/20	Own	8-3 1/8 x3 3/4	221	...	150	85-3800	3-2 .5x4.7	N	Own	4	Own	FS	U	5.14-6.67*	Own	O41H	303	506	a	2I	60	7x2 3/4 x .21	C
51	COE.....991W	.....	795	101	.....	.....	3260	6.00/20†S	7.50/20	Own	8-3 1/8 x3 3/4	239	...	170	95-3600	3-2 .5x4.7	N	Own	4	Own	FS	U	5.14-6.67*	Own	O41H	303	506	a	2I	60	7x2 3/4 x .21	C
52	COE.....91W	.....	795	134	.....	.....	3320	6.00/20†S	7.50/20	Own	8-3 1/8 x3 3/4	221	...	150	85-3800	3-2 .5x4.7	N	Own	4	Own	FS	U	5.14-6.67*	Own	O41H	303	506	a	2I	93	7x2 3/4 x .21	C
53	COE.....99W	.....	820	134	.....	.....	3330	6.00/20†S	7.50/20	Own	8-3 1/8 x3 3/4	239	...	170	95-3600	3-2 .5x4.7	N	Own	4	Own	FS	U	5.14-6.67*	Own	O41H	303	506	a	2I	93	7x2 3/4 x .21	C
54	COE.....917W	.....	820	157	.....	.....	3390	6.00/20†S	7.50/20	Own	8-3 1/8 x3 3/4	221	...	150	85-3800	3-2 .5x4.7	N	Own	4	Own	FS	U	5.14-6.67*	Own	O41H	303	506	a	2I	116	7x2 3/4 x .21	C
55	COE.....997W	.....	845	157	.....	.....	3400	6.00/20†S	7.50/20	Own	8-3 1/8 x3 3/4	239	...	170	95-3600	3-2 .5x4.7	N	Own	4	Own	FS	U	5.14-6.67*	Own	O41H	303	506	a	2I	116	7x2 3/4 x .21	C
56	One Tonner...92Y	.....	535	122	.....	.....	2485	6.00/17†S	7.50/17	Own	8-2 .6x3 .2	136	...	94	60-3500	3-2x4 .33	N	Own	3	Own	FS	U	**-6.67	Own	O41H	187	308	a	2I	48	6x2 1/4 x .19	C
57	One Tonner...91Y	.....	550	122	.....	.....	2670	6.00/17†S	7.50/17	Own	8-3 1/8 x3 3/4	221	...	150	85-3800	3-2 .5x4.7	N	Own	3	Own	FS	U	**-4.86	Own	O41H	187	308	a	2I	48	6x2 1/4 x .19	C
58	Comm. Car...922C	.....	445	112	.....	.....	1900	6.00/16S	6.50/16	Own	8-2 .6x3 .2	136	...	94	60-3500	3-2x4 .33	N	Own	3	Own	FS	U	4.11-4.44	Own	O41H	162	264	a	2I	38	5 1/2 x2x .11	Tlx
59	Comm. Car...91C	.....	460	112	.....	.....	2085	6.00/16S	6.50/16	Own	8-3 1/8 x3 3/4	221	...	150	85-3800	3-2 .5x4.7	N	Own	3	Own	FS	U	3.78-4.11	Own	O41H	162	264	a	2I	38	5 1/2 x2x .11	Tlx
♦ 60	General (4) AC-100	1/2	460	113	123	.....	2390	6.00/16S	15-7.50S	Own 228	6-3 1/8 x3 1/2	228	6.2	.....	.....	4-2 1/2 x5 1/2	N	Own	3	Own	S	U	**-4.11	Own	O41H	168	242	c	2I	38	5 1/4 x2 1/4 x .2	C
♦ 61	Motors..AC-150	3/4	535	123	.....	.....	2560	7.00/15S	15-7.50S	Own 228	6-3 1/8 x3 1/2	228	6.2	.....	.....	4-2 1/2 x5 1/2	N	Own	3	Own	S	U	**-4.11	Own	O41H	168	242	c	2I	48	5 1/2 x2 1/2 x 1/4	C
♦ 62	.....AC-251	1-1 1/2	550	113	.....	.....	2815	7.00/16S	7.00/16	Own 228	6-3 1/8 x3 1/2	228	6.2	.....	.....	4-2 1/2 x5 1/2	N	Own	3	Own	SF	H	4.57-5.14	Own	O41H	200	297	C	2I	37 3/4	6 1/2 x2 1/2 x 1/4	T
♦ 63	.....AC-252	1-1 1/2	555	133	.....	.....	2870	7.00/16S	7.00/16	Own 228	6-3 1/8 x3 1/2	228	6.2	.....	.....	4-2 1/2 x5 1/2	N	Own	4	Own	SF	H	4.57-5.14	Own	O41H	200	297	C	2I	37 3/4	6 1/2 x2 1/2 x 1/4	T
♦ 64	.....AC-300	1 1/2-3 1/2	575	133	177	.....	3570	6.00/20†S	7.50/20	Own 228	6-3 1/8 x3 1/2	228	6.2	180	80-3000	4-2 1/2 x5 1/2	N	Own	4	Own	SF	H	5.67-6.20	Own	O41H	337	478	C	2I	57 3/4	7x2 1/2 x 1/2	T
♦ 65	.....AC-350	1 1/2-4	795	133	193	.....	4270	6.00/20†S	8.25/20	Own 228	6-3 1/8 x3 1/2	228	6.2	180	80-3000	4-2 1/2 x5 1/2	N	Own	4	Own	SF	H	5.67-6.67	Own	O41H	337	478	C	2I	60	8x2 1/2 x 1/2	T
♦ 66	.....AC-400	1 1/2-4 1/2	950	133	193	.....	4450	6.00/20D	34x7	Own 248	6-3 1/2 x3 1/4	248	6.2	196	88-3000	4-2 1/2 x5 1/2	Y	Own	4	Own	SF	H	5.67-6.67	Own	O41HV	340	483	C	TX	60	8 1/4 x3x1/4	T
♦ 67	.....AC-450	1 1/2-5	1125	133	193	.....	4835	6.50/20D	34x7	Own 248	6-3 1/2 x3 1/4	248	6.2	196	88-3000	4-2 1/2 x5 1/2	Y	Own	4	Own	SF	H	5.71-7.40	Own	L41HV	342	534	CN	TX	60	8 1/4 x3x1/4	T
68	.....AC-500	2-5	1465	136	196	.....	5870	7.00/20D	9.00/20	Own 278	6-3 5/8 x4 1/2	278	6.0	220	100-2800	7-2 3/4 x11 3/4	Y	Own	5	Own	SF	H	5.71-7.40	Own	L41HV	342	534	CN	TX	60	8 1/4 x3 1/2 x 1/4	T
♦ 69	.....AC-550	2-5 1/2	1795	136	196	.....	5970	7.50/20D	9.75/20	Own 278	6-3 5/8 x4 1/2	278	6.0	220	100-2800	7-2 3/4 x11 3/4	Y	Own	5	Own	SF	H	6.50-7.20	Own	L41HV	386	613	CN	TX	60	8 1/4 x3 1/2 x 1/4	T
♦ 70	.....AC-600	2 1/2-6	2010	136	196	.....	6660	7.50/20D	9.75/20	Own 308	6-4 1/4 x4 1/2	308	6.0	244	107-2600	7-2 3/4 x11 3/4	Y	Own	5	Own	SF	H	6.43-7.16	Own	L41HV	389	663	N	TX	60	8 1/4 x3 1/2 x 1/4	T
♦ 71	.....AC-650	2 1/2-6 1/2	2455	136	196	.....	7130	8.25/20D	10.50/20	Own 308	6-4 1/4 x4 1/2	308	6.0	244	107-2600	7-2 3/4 x11 3/4	Y	Own	5	Own	SF	R	6.43-7.16	Own	L41HV	480	769	N	TX	60	8 1/4 x3 1/2 x 1/4	T
♦ 72	.....AC-700	3 1/2-7	3235	136	196	.....	7860	8.25/20D	10.50/20	Own 361	6-4 1/4 x4 1/2	361	6.0	284	118-2500	7-3x12 3/4	Y	Own	5	Own	SF	R	6.43-7.16	Own	L41HV	528	849	N	TX	60	9 1/4 x3 1/2 x 1/4	T
73	.....AC-800	4-8	4695	136	196	.....	9240	9.00/20D	11.25/20	Own 426	6-4 1/4 x5	426	6.0	340	141-2400	7-3x12 3/4	Y	Own	5	Own	2F	R	7.38-9.41	Own	TW41A	617	923	N	TX	60	9 1/4 x3 1/2 x 1/4	TL
74	.....AC-850	5-10	5215	136	196	.....	9795	9.00/20D	11.25/24	Own 451	6-4 3/8 x5	451	6.0	368	146-2400	7-3x12 3/4	Y	Own	5	Own	2F	R	7.34-9.19	Own	TW41A	617	923	N	TX	60	9 1/4 x3 1/2 x 1/4	TL
75	...(c.o.e.) Sp. Del	1	1385	112	.....	.....	2820	7.00/16S	7.50/18S	Own 230	6-3 1/4 x4 1/4	230	6.2	.....	.....	4-2 1/2 rx5 1/4	N	Own	3	Own	SF	H	4.57-5.14	Own	O41H	200	297	C	2I	62 1/2	7x2 1/2 x 1/2	T
♦ 76	...(c.o.e.) AF-310	1 1/2-4	690	107	156	.....	3890	6.00/20†S	7.50/20	Own 228	6-3 1/8 x3 1/2	228	6.2	180	80-3000	4-2 1/2 x5 1/2	N	Own	4	Own	SF	H	5.67-6.20	Own	O41H	337	478	C	2I	62 1/2	7x2 1/2 x 1/2	T
♦ 77	...(c.o.e.) AF-350	1 1/2-4 1/2	910	108	193	.....	4510	6.00/20†S	8.25/20	Own 228	6-3 1/8 x3 1/2	228	6.2	180	80-3000	4-2 1/2 x5 1/2	N	Own	4	Own	SF	H	5.67-6.67	Own	LO41H	349	478	C	2I	64	8 1/4 x3x1/4	T
♦ 78	...(c.o.e.) AF-400	1 1/2-5	1095	108	193	.....	4670	6.00/20D	34x7

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Line Number	MAKE AND MODEL	GENERAL (See Keynote)						TIRE SIZES (D-dual rear, S-single rear)		ENGINE DETAILS								TRANS-MISSION	REAR AXLE				FRONT AXLE	BRAKES						C-A Dimensions (Std. W. B.)	FRAME	
																								SERVICE								
		Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	Standard Front and Rear	Maximum Tire Size Furnished	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	Make and Model	Forward Spd's	Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	Make and Model	Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type		Side Rail Dimensions	Type
1	La France EJ6B	3½–5½	3070	175	215	20000	7850	8.25/20D	9.75/20	Wau 6BZ	6–4x4¼	320	5.3	210	86–3000	7–2⅝x10⅜	Y	Ful 5A33	5	Tim 58300H	SF	R	5.57–7.80	Tim 35000H	L41HV	384	794	a	TX	96	9x3¼x¼	L
2	Republic EJ6D	3½–5½	3175	175	215	20000	7925	8.25/20D	9.75/20	Wau 6BZ	6–4x4¼	320	5.3	210	86–3000	7–2⅝x10⅜	Y	Ful 5A33	5	Wis 72300H	2F	R	5.57–8.40	Tim 35000H	L41HV	384	794	a	TX	96	9x3¼x¼	L
3	Con't ..FH5B	4–6½	3380	175	215	22000	8200	9.00/20D	9.75/20	Wau 6MZR	6–4¼x4½	404	5.3	286	96–2400	7–2⅞x12½	Y	Ful 5A430	5	Tim 58300H	SF	R	5.57–7.80	Tim 35000H	L41HV	384	794	a	TX	96	9x3¼x¼	L
4	.....FH5D	4–6½	3485	175	215	22000	8275	9.00/20D	9.75/20	Wau 6MZR	6–4¼x4½	404	5.3	286	96–2400	7–2⅞x12½	Y	Ful 5A430	5	Wis 72300H	2F	R	5.77–8.40	Tim 35000H	L41HV	384	794	a	TX	96	9x3¼x¼	L
5	.....HH7	5–8	4020	175	215	26000	9075	9.75/20D	10.50/22	Wau 6MZR	6–4¼x4½	404	5.3	286	96–2400	7–2⅞x12½	Y	Ful 5A430	5	Wis 1337H	2F	R	6.85–9.41	Tim 35000H	L41HV	463	892	a	TX	96	9x3¼x¼	L
6	.....KH2	5–8½	4490	175	215	27500	9500	9.75/20D	10.50/24	Wau 6SRLR	6–4⅜x5½	462	5.4	328	111–2400	7–3x13¼	Y	Ful 5A620	4	Wis 1337H	2F	R	6.85–9.41	Tim 35100H	L41HV	495	884	a	TX	96	9x3¼x¼	L
7	.....MH5	6–10	4860	175	215	34000	10150	9.75/20D	10.50/24	Wau6SRKR	6–4⅜x5½	517	5.4	368	125–2300	7–3x13¼	Y	Ful 5A620	4	Wis 1757H	2F	R	6.86–9.20	Tim 26452H	L41HV	495	970	a	TX	96	9¼x3⅝x3½	L
8	.....CHS5	12–18	9600	211	251	60000	15825	10.50/20D	11.25/24	Wau 6RB	6–5x5⅛	677	5.3	470	145–2000	4–3½x11	Y	Ful 4B86	4	Own	CD	R	8.25–10.19	Tim 27452N	WsrIA	868	1424	s	JX	123	9¼x3½x3½	L
9	Mack (a) .....ED	.....	675	120	136	.....	3800	6.00/17S	6.50/17	Own EN11	6–3⅛x4⅜	210	5.8	145	67–3000	4–2¼x6	N	WG TR27	3	Cla RA40	SF	H	5.12–6.33	Cla FA18	L41H	236	368	a	TX	52	7x3x⅛	T
10	.....EE	.....	985	133	193	.....	4800	6.00/20S	7.50/20	Own FO	6–3½x4½	253	5.7	166	78–3000	7–2⅝x12	N	WG TR11	4	Tim RA11	SF	H	5.14–6.80	Own FA12	L41H	296	478	a	TX	60	7 11/16x3x7/32	T
11	.....EF	.....	1195	133	193	.....	5275	6.00/20D	8.25/20	Own FM	6–3⅛x4½	271	5.7	188	83–3000	7–2⅝x12	N	WG TR11	4	Own RA17	SF	H	4.58–6.80	Own FA12	L41HV	325	528	a	TX	60	7 11/16x3x7/32	T
12	.....EG	.....	1495	133	193	.....	5500	6.50/20D	8.25/20	Own FK	6–3⅛x4⅜	290	5.7	200	94–3000	7–2⅝x12	N	Fu TR14	5	Own RA22	SF	H	4.58–6.80	Own FA16	L41HV	328	650	a	TX	60	8x3x¼	T
13	.....EH	.....	2095	146	194	.....	6350	7.00/20D	9.00/20	Own BG	6–3⅜x5	310	5.4	210	96–2800	7–2⅝x10 3/32	Y	Fu TR14	5	Tim RA26	SF	H	4.44–7.40	Own FA19	L41HV	370	686	a	TX	72	8½x3¾x¼	T
14	.....EH	.....	2245	146	194	.....	6400	7.00/20D	9.00/20	Own BG	6–3⅜x5	310	5.4	210	96–2800	7–2⅝x10 3/32	Y	Fu TR14	5	Own RA28	2F	H	6.87–8.59	Own FA19	L41HV	370	686	a	TX	72	8½x3¾x¼	T
15	.....ER	.....	2950	146	194	.....	7500	8.25/20D	9.00/20	Own BG	6–3⅜x5	310	5.4	210	96–2800	7–2⅝x10 3/32	Y	Fu TR14	5	Own AB	CD	R	7.70–13.10	Own FA19	O41MV	441	735	a	TX	72	8½x3¾x¼	T
16	.....EM	.....	2495	146	194	.....	7850	7.50/20D	9.75/20	Own BG	6–3⅜x5	310	5.4	210	96–2800	7–2⅝x10 3/32	Y	Own BF	5	Own EM	SF	H	5.43–6.33	Own EM	O41MV	468	750	a	TX	72	9x3¼x¼	T
17	.....ES	.....	4000	144	210	.....	8300	8.25/20D	9.75/22	Own CU	6–3⅞x5	354	5.3	250	103–2600	7–2⅝x10 3/32	Y	Own BF	5	Own AB	CD	R	9.30–13.10	Own EQ	O41MV	499	820	a	TX	72½	9 1/16x3¼x⅜	T
18	.....EQ	.....	2995	146	194	.....	7950	8.25/20D	9.75/20	Own CU	6–3⅞x5	354	5.3	250	103–2600	7–2⅝x10 3/32	Y	Own BF	5	Own EQ	2F	H	6.31–8.64	Own EQ	O41MV	468	750	a	TX	72½	9 1/16x3¼x⅜	T
19	.....BM	.....	4250	153	225	.....	9550	9.00/20D	10.50/20	Own CE	6–4x5½	415	5.0	270	108–2400	7–3x12⅞	Y	Own CF	5	Own BM	2F	H	6.31–8 64	Own BM	O4IMV	562	920	a	TX	84	10 1/16x3¼x¼	T
20	.....BX	.....	5250	171	225	.....	11150	9.75/22D	11.25/24	Own CF	6–4¼x5½	468	5.0	310	118–2400	7–3x12⅞	Y	Own CF	5	Own BX	2F	H	6.46–9.05	Own BX	O4IMV	690	976	a	TX	102	10 5/16x3 1/16x⅛	T
21	.....(c.f.) EEU	.....	1180	107	162	.....	5125	6.00/20S	7.50/20	Own FO	6–3½x4½	253	5.7	166	78–3000	7–2⅝x12	N	WG TR11	4	Own RA17	SF	H	4.58–6.80	Own FA12	L41H	296	478	a	TX	60	8x3x¼	T
22	.....(c.f.) EFU	.....	1390	107	162	.....	5500	6.00/20D	8.25/20	Own FM	6–3⅜x4⅜	271	5.7	188	83–3000	7–2⅝x12	N	WG TR11	4	Own RA22	SF	H	4.58–6.80	Own FA12	L41HV	325	528	a	TX	60	8x3x¼	T
23	.....(c.f.) EGU	.....	1690	107	162	.....	5625	6.50/20D	8.25/20	Own FK	6–3¼x4⅜	290	5.7	200	94–3000	7–2⅝x12	N	Fu TR14	5	Tim RA21	SF	H	4.86–6 80	Own FA16	L41HV	328	650	a	TX	60	8x3x¼	T
24	.....(c.f.) EHU	.....	2320	108	162	.....	6500	7.00/20D	9.00/20	Own BG	6–3⅜x5	310	5.4	210	96–2800	7–2⅝x10 3/32	Y	Fu TR14	5	Tim RA26	SF	H	4.44–7.40	Own FA19	L41HV	370	686	a	TX	66	9x3¼x¼	T
25	.....(c.f.) EHU	.....	2470	108	162	.....	6550	7.00/20D	9.00/20	Own BG	6–3⅜x5	310	5.4	210	96–2800	7–2⅝x10 3/32	Y	Fu TR14	5	Own RA28	2F	H	6.87–8.59	Own FA19	L41HV	370	686	a	TX	66	9x3¼x¼	T
26	.....(c.f.) EMU	.....	2720	108	162	.....	7175	7.50/20D	9.75/20	Own BG	6–3⅜x5	310	5.4	210	96–2800	7–2⅝x10 3/32	Y	Own BF	5	Own EM	SF	H	5.43–6.33	Own EM	O41MV	468	750	a	TX	66	9 1/16x3¼x⅜	T
27	.....(c.f.) EQU	.....	3220	108	162	.....	8000	8.25/20D	9.75/20	Own CU	6–3⅞x5	354	5.3	250	103–2600	7–2⅝x10 3/32	Y	Own BF	5	Own EQ	2F	H	6.31–8.64	Own EQ	O41MV	468	750	a	TX	66	9 1/16x3¼x⅜	T
28	.....(*)(e.b.s.) CH	.....	5150	119	189	.....	10600	9.00/20D	10.50/20	Own CE	6–4x5½	415	5.0	270	108–2400	7–3x12⅞	Y	Own CF	5	Own BM	2F	H	6.31–8.64	Own CH	O4IMV	562	920	a	TX	95	10 1/16x3¼x1/16	T
29	.....(*)(e.b.s.) CJ	.....	6100	119	189	.....	10950	9.75/22D	11.25/24	Own CF	6–4¼x5½	468	5.0	310	118–2400	7–3x12⅞	Y	Own CF	5	Own BX	2F	H	6.46–9.05	Own CJ	O4IMV	690	976	a	TX	95	10 5/16x3 1/16x⅛	T
30	(D) .....EED	.....	1785	133	193	.....	5350	6.00/20S	7.50/20	Bud 4DT212	4–3½x5½	212	...	152	63–2300	5–3x7 1/16	Y	WG TR11	4	Tim RA11	SF	H	5.14–6.80	Own FA12	L41H	296	478	a	TX	60	7 11/16x3x7/32	T
31	(D) .....EFD	.....	2445	133	193	.....	6000	6.00/20D	8.25/20	Bud 6DT278	6–3⅜x4½	278	...	198	83–2600	7–3x9 5/16	Y	WG TR11	4	Own RA17	SF	H	4.58–6.80	Own FA12	L41HV	325	528	a	TX	60	7 11/16x3x7/32	T
32	(D) .....EGD	.....	2745	133	193	.....	6250	6.50/20D	8.25/20	Bud 6DT294	6–3⅜x4⅜	294	...	212	85–2400	7–3x9 5/16	Y	Fu TR14	5	Own RA22	SF	H	4.58–6.80	Own FA16	L41HV	328	650	a	TX	60	8x3x¼	T
33	(D) .....EHD	.....	3345	146	194	.....	7050	7.00/20D	9.00/20	Bud 6DT317	6–3⅝x5½	317	...	224	90–2300	7–3x9 5/16	Y	Fu TR14	5	Tim RA26	SF	H	4.44–7.40	Own FA19	L41HV	370	686	a	TX	72	8½x3¾x¼	T
34	(D) .....EMD	.....	3745	146	194	.....	8600	7.50/20D	9.75/20	Bud 6DT317	6–3⅝x5½	317	...	224	90–2300	7–3x9 5/16	Y	Own BF	5	Own EM	SF	H	5.43–6.33	Own EM	O41MV	468	750	a	TX	72	9 1/16x3¼x⅜	T
35	(D) .....EQD	.....	4745	146	194	.....	8850	8.25/20D	9.75/20	Bud 6DT389	6–3⅞x5½	389	...	284	96–2100	7–3x12 1/16	Y	Own BF	5	Own EQ	2F	H	6.31–8.64	Own EQ	O41MV	468	750	a	TX	72½	9 1/16x3¼x⅜	T
36	(D) .....BMD	(o)	4250	153	225	.....	10000	9.00/20D	10.56/20	Own ED	6–4¾x5¾	519	14.	336	118–2000	7–3½x11 1/16	Y	Own CF	5	Own BM	2F	H	6.31–8.64	Own BM	O4IMV	562	920	a	TX	84	10 1/16x3¼x1/16	T
37	(D) .....BXD	(o)	5250	171	225	.....	11650	9.75/22D	11.25/24	Own ED	6–4¾x5¾	519	14.	382	131–2000	7–3½x11 1/16	Y	Own CF	5	Own BX	2F	H	6.46–9.05	Own BX	O4IMV	690	976	a	TX	102	10 5/16x3 1/16x⅛	T
38	(D)(c.f.) EEUD	.....	1980	107	162	.....	5675	6.00S	7.50 .20	Bud 4DT212	4–3½x5½	212	...	152	63–2300	5–3x7 1/16	SF	WG TR11	4	Tim RA11	SF	H	5.14–6.80	Own FA12	L41H	296	478	a	TX	60	8x3x¼	T
39	(D)(c.f.) EFUD	.....	2640	107	162	.....	6200	6.00/20D	8.25/20	Bud 6DT278	6–3⅜x4½	278	...	198	83–2600	7–3x9 5/16	SF	WG TR11	4	Own RA17	SF	H	4.58–6.80	Own FA12	L41HV	325	528	a	TX	60	8x3x¼	T
40	(D)(c.f.) EGUD	.....	2940	107	162	.....	6375	6.50/20D	8.25/20	Bud 6DT294	6–3⅜x4⅜	294	...	212	85–2400	7–3x9 5/16	Y	Fu TR14	5	Own RA22	SF	H	4.58–6.80	Own FA16	L41HV	328	650	a	TX	60	8x3x¼	T
41	(D)(c.f.) EHUD	.....	3570	108	162	.....	7150	7.00/20D	9.00/20	Bud 6DT317	6–3⅝x5½	317	...	224	90–2300	7–3x9 5/16	Y	Fu TR14	5	Tim RA26	SF	H	4.44–7.40	Own FA19	L41HV	370	686	a	TX	66	9x3¼x¼	T
42	(D)(c.f.) EMUD	.....	3970	108	162	.....	8525	7.50 .20D	9.75/20	Bud 6DT317	6–3⅝x5½	317	...	224	90–2300	7–3x9 5/16	Y	Own BF	5	Own EM	SF	H	5.43–6.33	Own EM	O41MV	468	750	a	TX	66	9x3¼x¼	T
43	(D)(c.f.) EQUD	.....	4970	108	162	.....	8900	8.25/20D	9.75/20	Bud 6DT389	6–3⅞x5½	389	...	284	96–2100	7–3x12 1/16	Y	Own BF	5	Own EQ	2F	H	6.31–8.64	Own EQ	O41MV	468	750	a	TX	66	9 1/16x3¼x⅜	T
44	(D)(*)(e.b.s.)CHD	(o)	5150	119	189	.....	11000	9.00/20D	10.50/20	Own ED	6–4¾x5½	519	...	336	118–2000	7–3½x11 1/16	Y	Own CF	5	Own BM	2F	H	6.31–8.64	Own CH	O4IMV	562	920	a	TX	95	10 1/16x3¼x1/16	T
45	(D)(*)(e.b.s.)CJD	(o)	6100	119	189	.....	11450	9.75/22D	11.25/24	Own ED	6–4¾x5¾	519	14.	382	131–2000	7–3½x11 1/16	Y	Own CF	5	Own BX	2F	H	6.46–9.05	Own CJ	O4IMV	690	976	a	TX	95	10 5/16x3 1/16x⅛	T
46	Plymouth (*) PT57	Com'l	560	116	116	4000	1920	6.00/16S	6.00/16S	Own	6–3 1/16x4⅛	201	6.7	145	70–3000	4–2¼x5 11/16	N	N.P.	3	Own	Hy½	H	3.73–4.78	Own	O41H	148	251	C	TX	37 11/16	6x2x⅛	C
47	.....(*) PT-81	Com'l	545	116	116	4000	2145	6.00/16S	6.00/16S	Own	6–3 1/16x4⅛	201	6.7	148	70–3000	4–2¼x5 11/16	N	N.P.	3	Own	Hy½	H	3.73–4.78	Own	O41H	148	251	C	TX	40 1/16	6x2x⅛	C
48	Reo (x) ..(**) 4-50	½	579	114	120	.....	1973	6.00/16S	6.50/16	Own	4–3 3/16x4⅛	140	5.4	98	42–2800	3–2¼x4 11/16	N	WG T84C	3	Spi	S½	H	4.55–4.90	Own	L41H	198	242	C	TX	38¾	5 1/16x2¼x⅜	T
49	.....(**) 6-50	½	613	114	120	.....	2063	6.00/16S	6.50/16	Own	4–3 3/16x4⅛	209	5.4	145	70–2800	4–2¼x5 11/16	N	WG T86	3	Spi	S½	H	4.55–4.90	Own	L41H	198	242	C	TX	38¾	5 1/16x2¼x⅜	T
50	.....(**) 4-75	¾	661	114	120	.....	2063	6.50/16S	7.50/16	Own	4–3 3/16x4⅛	140	5.4	98	42–2800	3–2¼x4 11/16	SF	WG T84C	3	Spi	SF	H	**5.10	Spi	L41H	213	327	C	TX	38¾	5 1/16x2¼x⅜	T
51	.....(**) 6-75	¾	695	114	120	.....	2171	6.50/16S	7.50/16	Own	4–3 3/16x4⅛	209	5.4	145	70–2800	4–2¼x5 11/16	SF	WG T86	3	Spi	SF	H	**5.10	Spi	L41H	213	327	C	TX	38¾	5 1/16x2¼x⅜	T
52	.....1A4-1C4	1–1½	656	139	166	.....	2930	6.00/20†8	7.00/20	Own	6–3⅜x4⅜	209	5.4	145	70–2800	4–2¼x5 11/16	N	Own	4	Own	SF	H	5.28–6.33	Own	L41H	246	366	C	TX	47 1/16	7 1/16x2⅜x⅜	T
53	.....1B4-1D4	1½–2½	732	139	190	.....	3405	6.00/20†8	7.50/20	Own	6–3⅜x4¼	228	5.4	150	73–3000	7–2⅝x10 11/16	N	Own	4	Own	SF	H	5.28–6.33	Own	L41H	289	438	a	TX	57½	7 1/16x2⅜x⅜	T
54	.....(*) 1B7M	1½–2½	1190	105	166	.....	3630	6.00/20†8	7.50/20	Own	6–3⅜x4¼	228	5.4	150	73–3000	7–2⅝x10 11/16	N	Own	4	Own	SF	H	5.28–6.33	Own	L41HV	289	438	a	TX	60½	7 1/16x3x¼	T
55	.....1B4H-1D4H	1½–2½	822	139	196	.....	3425	6.00/20†8	7.50/20	Own	6–3⅜x5	268	5.5	160	81–2800	7–2⅝x10 11/16	N	Own	4	Own	SF	H	5.28 6.33	Own	L41H	289	438	a	TX	57½	7 1/16x2⅜x 1/32	T
56	.....2B4–2D4	2–3	989	142	190	.....	4225	6.50/20D	8.25/20	Own	6–3⅜x5	268	5.5	178	83–2800	7–2⅝x10 11/16	N	Own	4	Own	SF	H	5.28–6.33	Own	L41H	349	523	a	TX	60½	7 1/16x3x¼	TL
57	..(6) 2H5Z-2J5Z	2–4	1317	142	190	.....	4650	6.50/20D	8.25/20	Own	6–3⅜x5	268	5.5	178	83–2800	7–2⅝x10 11/16	N	Cla	5	Own	2F	H	6.62–8.21	Own	L41HV	349	523	c	TX	60½	7 1/16x3x¼	TL
58	.....(*) 2B7M	2–4	1492	105	166	.....	4095	6.50/20D	8.25/20	Own	6–3⅜x5	268	5.5	178	83–2800	7–2⅝x10 11/16	N	Own	5	Own	2†SF	H	5.28–6.33	Own	L41HV	349	523	a	TX	60½	7 1/16x3x¼	TL
59	..3H5(3J5–3K5)	3–5	1909	153	205	.....	6280	7.50/20D	9.75/20	Own	6–3⅝x5	309	5.4	204	87–2800	7–2⅝x10 11/16	Y	Own	4	Own	SF	H	6.14–7.17	Own	L41HV	407	660	c	FD	67 3/4	8 1/16x3x¼	TB
60	..3HR5(3JR5–3KR5)	3½–5	2266	153	205	.....	6470	7.50 20D	9.75/20	Own	6–3⅝x5	309	5.4	204	87–2800	7–2⅝x10 11/16	Y	Cla	5	Own	2F	H	** –8.5	Own	WsrIA	407	660	c	FD	67 3/4	8 1/16x3x¼	TB
61	..4H5(4J5–4K5)	4–6	2988	156	205	.....	7270	8.25/20D	10.50/20	Buda	6–4⅜x4¾	428	4.7	284	104–2600	7–3x11½	Y	BL	5	Own	2F	H	** –8.5	Own	L41HV	407	660	c	FD	67 3/4	10x3x¼	TB
62	.....4WH5	4–6	3350	156	205	.....	7650	8.25/20D	10 50/20	Buda	6–4½x4¾	428	4.7	284	104–2600	7–3x11½	Y	BL	5	Own	2F	H	** –8.5	Own	Ws4IA	407	660	c	FD	67½	10x3x¼	TB
63	Ster- ..FB50 De L	2–2½	1915	177	207	13000	4900	7.00/20D	8.25/20	Wau 6BK	6–3¾x4¼	282	5.2	188	85–3200	7–2⅝x10 1/16	N	WG T9	4	Tim 53307H	SF	R	5.83–6.80	Tim 33000H	L41H	328	616	a	TX	91	10x3¼x¼	L
64	ling ..FB60 De L	2½–3	2065	177	207	15000	5150	7.00/20D	8.25/20	Wau 6BK	6–3¾x4¼	282	5.2	188	85–3200	7–2⅝x10 1/16	N	Own UC12	4	Tim 54411H	SF	R	5.83–6.80	Tim 33000H	L41HV	338	672	a	TX	91	10x3¼x¼	L
65	.....FB70 De L	3–4	2315	177	207	17000	5475	7.50/20D	9.00/20	Wau 6BK	6–3¾x4¼	282	5.2	188	85–3200	7–2⅝x10 1/16	N	Own UC6	4	Tim 56410H	SF	R	5.71–7.40	Tim 33000H	L41HV	338	754	a	TX	91	10x3¼x¼	L
66	.....FD70	3–4	2384	177	207	17000	5540	7.50/20D	9.00/20	Wau 6BK	6–3¾x4¼	282	5.2	188	85–3200	7–2⅝x10 1/16	N	Own UC6	4	Tim 76410H	SF	R	7.35–8.21	Tim 33000H	L41HV	338	754	a	TX	91	10x3¼x¼	L
67	.....FB80	3½–4½	3070	177	207	22000	6525	8.25/20D	9.75/20	Wau 6MK	6–4⅛x4¾	381	6.1	252	85–2500	7–2⅝x12½	Y	Own UC25	5	Tim 58300H	SF	R	5.57–7.80	Tim 33000H	L41HV	384	794	a	TX	91	10x3¼x¼	L
68	.....FD90	4–5	3340	177	207	22000	7175	9.00/20D	9.75/20	Wau 6MK	6–4⅛x4¾	381	6.1	252	85–2500	7–2⅝x12½	Y	Own UC25	5	Wis 72000L	2F	R	5.61–8.40	Tim 33000H	L41HV	384	756	a	TX	91	10x3¼x¼	L
69	.....FC90	4–5	3250	177	207	22000	6775	8.25/20D	9.75/20	Wau 6BK	6–3¾x4¼	282	5.2	188	85–3200	7–2⅝x10 1/16	N	BL2252	5	Own TU90H	CD	R	7.74–10.8	Tim 33000H	L41HV	384	1138	s	TX	91	10x3¼x¼	L
70	.....FD95	4½–5½	3840	177	207	26000	7850	9.75/20D	10.50/22	Wau 6MZ	6–4¼x4¾	404	5.7	267	89–2400	7–2⅝x12½	Y	BL5351	5	Tim 75733H	2F	R	6.85–9.41	Tim 35000H	L41HV	478	892	a	TX	91	10x3¼x¼	L
71	.....FC95	4½–5½	4035	177	207	26000	7775	9.75/20D	10.50/22	Wau 6MZ	6–4¼x4¾	404	5.7	267	89–2400	7–2⅝x12½	Y	BL5351	5	Own TU95H	CD	R	7 74-10 8	Tim 35000H	L41HV	478	1138	s	TX	91	10x3¼x¼	L
72	.....(7) FD97	5–6	5300	195	225	26000	8235	9.75/20D	10.50/24	Wau 6SRL	6–4⅜x5½	462	4.6	302	102–2400	7–3x13 7/16	Y	Own UC2	4	Tim 75733H	2F	R	6.85–9.41	Tim 35100H	L41HV	510	990	a	TX	107	9x3¼x¼	L
73	.....(7) FC100	5–6	5245	195	225	26000	7835	9.75/20D	10.50/24	Wau 6SRL	6–4⅜x5½	462	4.6	302	102–2400	7–3x13 7/16	Y	Own IB100M	CD	R	6 11-10 8	Tim 35000N	O21MV	576	724	a	TX	107	9x3¼x¼	L
74	.....(7) FD115	6–7	5745	195	225	32000	8685	9.75/20D	10.50/24	Wau 6-125	6–4⅝x5½	462	5.0	328	125–2400	7–3x13 7/16	2F	Own UC2	4	Tim 76733H	2F	R	6.66–9.20	Tim 35100H	L41HV	510	1030	s	TX	107	9x3¼x¼	L
75	.....(7) FC135	6–7	5580	195	225	34000	8835	9.75/22D	10.50/24	Wau 6–125	6–4⅝x5½	462	5.0	328	125–2400	7–3x13 7/16	Y	Own UC2	4	Own IB140M	CD	R	6 11-10 8	Tim 26450N	O21MV	528	746	s	TX	107	9x3¼x¼	L
76	.....(7) FD140	7–8	6860	195	225	36000	9850	10.50/20D	11.25/24	Wau 6SRK	6–4⅜x5½	517	4.5	331	110–2300	7–3x13¾	Y	Own UC2	4	Wis 1910W	2F	R	7 16–10 0	Tim 26450TW	Ws4IA	574	970	a	TX	107	9x3¼x¼	L
77	.....(7) HC140	7–8	5715	189	219	36000	9488	9.75/22D	10.50/24	Wau 6–125	6–4⅝x5½	462	5.0	328	125–2400	7–3x13 7/16	Y	Own IB140M	CD	R	7.40–10 8	Tim 26452N	O21MV	646	746	s	TX	107	9x3¼x¼	L
78	.....(7) HC150	10–14	8930	182	228	45000	11785	10.50/24D	13.50/24	Wau 6RB	6–5x5⅛	677	5.3	470	145–2000	4–3½x11 13/16	Y	Ow IN815W	4	Ow IN815W	CD	R	8 35–13 4	Tim 27452TW	Ws4IA	708	1176	a	TX	123	9¼x3½x3½	L
79	.....(7) HC200	12–16	9895	182	228	50000	14088	10.50/24S	13.50/24	Wau 6RB	6–5x5⅛	677	5.3	470	145–2000	4–3½x11 13/16	Y	Ow IC9	4	Ow IC9	CD	R	8 35–13 4	Tim 27452TW	Ws4IA	708	1176	a	TX	123	9¼x3½x3½	L
80	.....(7) HC250	15–18	11495	182	228	60000	16068	11.25/24S	13.50/24	Wau 6RB	6–5x5⅛	677	5.3	470	145–2000	4–3½x11 13/16	Y	Ow IC9	4	Ow IC9	CD	R	8 35–13 4	Tim 27452TW	Ws4IA	708	1176	a	TX	123	9¼x3½x3½	L

(*) Price 33.75 f. o. b. factory. (**) Price includes chassis and cab. (***) Price includes chassis, cab and body. (a) Delivered at Factory Price. Includes all Federal Taxes but does not include any state and/or local taxes.

♦ 81	Studebaker. (*) L5		650	116			2500	6

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Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	Maximum Tire Size Furnished	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Spd's	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES: SERVICE Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	**Indiana** 12X4	1½–2	(10)	131	Op	.....	4650	6.50/20D	7.50/20	Her JXC	6–3¾x4¼	282	5.4	176	73–2800	7–2½x10H	Y	BL 2341	4	Tim 53210	SF	H	5.14–5.66	Wis F30B	L4IHV	260	412	G	TD	46½	7½x2½x½	T
2	.....14X4	2–3	(10)	140	Op	.....	5900	7.50/20D	8.25/20	Her JXC	6–3¾x4¼	282	5.4	176	73–2800	7–2½x10H	Y	BL 2341	4	Tim 54413	SF	H	5.14–6.6	Wis F54H	L4IHV	260	528	G	TD	53½	7½x2¾x¾	T
3	.....16X4	2½–3	(10)	156	Op	.....	7500	7.50/20D	8.25/20	Her WXC	6–4x4½	339	4.7	226	76–2400	7–2½x13¾	Y	BL 3341	4	Wis 5000L	SF	H	6.35–7.35	Wis F500	L4IHV	330	578	G	TD	72½	7½x3x¾	T
4	.....18X4	4½–5	(10)	160	Op	.....	9000	9.00/20D	9.75/20	Her YXC	6–4⅝x4¾	428	4.5	283	94–2200	7–3x14	Y	BL 5341	4	Wis 72000L	2F	H	7.06–8.00	Wis F213	L4IHV	492	867	G	TD	72	8½x3x⅞	T
5	.....18X4A	4½–5	(10)	160	Op	.....	8700	9.00/20D	9.75/20	Her YXC	6–4⅝x4¾	428	4.5	283	94–2200	7–3x14	Y	BL 5341	4	Tim 58205H	SF	H	6.14–6.53	Wis F580H	L4IHV	345	785	G	TD	72	8x3x¼	T
6	.....20X4	5–6	(10)	172	Op	.....	10600	9.75/20D	9.75/20	Her RXB	6–4½x5¼	501	4.5	330	106–2000	7–3x12½	Y	BL 5341	4	Wis 1337H	2F	H	7.52–8.59	Wis F311H	L4IHV	582	975	G	TD	84	8¼x3x⅜	T
7	.....22X4	5½–6½	(10)	185	Op	.....	13000	10.50/20D	10.50/20	Her HXB	6–5x6	707	4.5	455	148–2000	7–3½x17	Y	BL 7341	4	Wis 417W	2F	H	7.14–9.15	Wis 1737W	Ws4IA	648	975	G	TD	84	10x3x⅞	
8	**Kenworth**.....539	.....	6118	134	146	24000	19180	9.00/20D	9.75/24	Bud K428	6–4¾x4¾	428	5.3	302	108–2400	7–3x11½	Y	Fu 5A62	5	Wis 72300	2F	H	5.77–8.40	Wis F207	L4IHV	458	785	a	PD	72	7½x3¼x½	CCC
9	540	.....	7251	134	146	27700	10310	9.75/20D	9.75/24	Bud K428	6–4¾x4¾	428	5.3	302	108–2400	7–3x11½	Y	Fu 5A62	5	Wis 1337	2F	H	6.85–9.41	Wis F323	Ws4IA	648	975	a	PD	72	7½x3¼x½	CCC
10	541	.....	7835	134	146	27700	10650	9.75/20D	9.75/24	Bud LO525	6–4½x5½	525	5.5	385	135–2200	7–3x11½	Y	Fu 5A62	5	Wis 1337	2F	H	6.85–9.41	Wis F323	Ws4IA	648	975	a	PD	72	7½x3¼x½	CCC
11	542	.....	8412	134	146	35000	10935	10.50/20D	10.50/24	Bud LO525	6–4½x5½	525	5.5	385	135–2200	7–3x11½	Y	Fu 5A62	5	Wis 1757	2F	H	6.02–8.50	Wis F427	Ws4IA	648	975	a	PD	72	7½x3¼x½	CCC
	Marmon-Herr.																														
12	.....(c) LD3-4	½	1445	113	113	.....	2719	7.50/15S	9.00/15S	Ford V8	8–3⅛x3¾	221	6.1	150	85–3800	3–2.4x5½	N	Ford	4	Ford	8¾	U	** 4.44	Own LD1	FO4IH	162	264	a	2/4 I	36½	5½x2x.11	C
13	.....(c) OT2-4	1	1585	123	123	.....	3322	7.00/17S	7.50/17S	Ford V8	8–3⅛x3¾	221	6.1	155	85–3800	3–2.4x5½	N	Ford	4	Ford	8F	U	** 4.11	Own 78	FO4IH	201	308	c	2/4 I	48½	6x2¾x⅞	CCC
14	(16)....(c) F5-4	1½–3	1502	135	135	.....	4279	6.00/20	32x6	Ford V8	8–3⅛x3¾	221	6.1	150	85–3800	3–2.4x5½	N	Ford	4	Ford	8F	U	** 6.67	Own IX41	FO4IH	346	508	a	2/4 I	58	7x2¾x⅞	CCC
15	(16)(c.o.e.)(c) F5-4	1½–3*	1855	135	135	.....	4207	6.00/20D	32x6	Ford V8	8–3⅛x3¾	221	6.1	150	85–3800	3–2.4x5½	N	Ford	4	Ford	8F	U	** 6.67	Own IX42	FO4IH	346	508	a	2I	93	7x2¾x .21	CCC
16	(16)....(c) F6-4	1½–3	1549	157	157	.....	4319	6.00/20D	32x6	Ford V8	8–3⅛x3¾	221	6.1	150	85–3800	3–2.4x5½	N	Ford	4	Ford	8F	U	** 6.67	Own IX41	FO4IH	346	508	a	2/4 I	58	7x2¾x⅞	CCC
17	(16)(c)(c.o.e.)F6-4	1½–3*	1890	157	157	.....	4424	6.00/20D	32x6	Ford V8	8–3⅛x3¾	221	6.1	150	85–3800	3–2.4x5½	N	Ford	4	Ford	8F	U	** 6.67	Own IX41	FO4IH	346	508	a	2/4 I	58	7x2¾x⅞	CCC
18	.....(*) C10-4	2–2½	2490	143	Op	.....	4430	6.50/20D	7.50/20	Her JXB	6–3⅝x4¼	263	5.4	182	78–2800	7–2½x10H	N	WG T9	4	Tim MH811	SF	H	** 6.6	TWH MH81	41H	267	452	a	TX	60	7½x2½x.11	CCC
19	.....(*) C20-4	2½–3	2890	143	Op	.....	4665	7.00/20D	7.50/20	Her JXC	6–3¾x4¼	282	5.3	196	84–2800	7–2½x10H	N	Fu 5A33	5	Tim MH811	SF	H	** 6.6	TWH MH81	41H	267	452	a	TX	60	7½x2½x.11	C
20	.....(*) C30-4	3–3½	3250	143	Op	.....	5155	7.50/20D	8.25/20	Her JXD	6–4x4¼	320	5.3	224	95–2800	7–2½x10H	N	Fu 5A33	5	Tim MH822	SF	H	** 6.8	TWH MH82	41H	281	527	a	TX	60	7½x2½x.11	CCC
21	.....(*) C40-4	3½–4	4550	158	Op	.....	7000	8.25/20D	9.00/20	Her WXC3	6–4¼x4½	383	5.0	260	106–2800	7–2⅝x13¾	Y	Fu 5A430	5	Tim MH833	SF	H	** 5.5	TWH MH83	41H	342	578	a	FD	72	9½x3x¼	CCC
22	.....(*) C50-4	4–5	4995	158	Op	.....	7895	9.00/20D	9.75/20	Her WXLC3	6–4¼x4½	404	5.0	293	118–2800	7–2⅝x13¾	Y	Fu 5A430	5	Tim MH844	SF	H	** 7.8	TWH MH84	41H	384	785	a	FD	72	9½x3x¼	CCC
23	.....(*) C55-4	4½–5½	5400	158	Op	.....	8100	9.00/20D	9.75/20	Her RXB	6–4½x5¼	501	4.5	330	110–2200	7–3x14	Y	Fu 5A62	5	Wis MH888	2F	H	** 7.52	WH MH88	41H	738	975	a	FD	72	9½x3x¼	CCC
24	...(*) C55DR-4	6–7	6120	158	Op	.....	8500	9.00/20D	9.75/20	Her RXB	6–4½x5¼	501	4.5	330	110–2200	7–3x14	Y	Fu 5A620	5	Wis MH866	2F	H	** 7.27	WH MH86	41H	461	785	a	FD	72	9½x3x¼	CC
25	.....(*) C60-4	5–6	6500	161	Op	.....	8785	9.00/20D	9.75/20	Her RXB	6–4½x5¼	501	4.5	330	110–2200	7–3x14	Y	Fu 5A620	5	Wis MH899	2F	H	** 7.52	WH MH89	41A	738	975	a	FD	72	10¼x3x⅞	CC
26	.....(*) C70-4	6–7	8895	161	Op	.....	9880	9.75/20D	9.75/22	Her RXB	6–4½x5¼	501	4.5	330	110–2200	7–3x14	Y	Fu 5A620	5	Wis MH900	2F	H	** 8.05	WH MH90	41A	738	975	a	FD	72	10¼x3x⅞	CC
27	.....(*) C80-4	7–9	9750	161	Op	.....	10420	10.50/20D	10.50/22	Her RXC	6–4⅝x5¼	529	4.9	350	114–2200	7–3x14	Y	Fu 5A620	5	Wis MH900	2F	H	** 8.05	WH MH90	41A	738	975	a	FD	72	10¼x3x⅞	CP
28	.....(*)TH515-4	7–9	11910	198	Op	.....	12600	10.50/20D	10.50/22	Her HXD	6–5½x6	855	4.5	555	180–2000	7–3½x17	Y	BL 7341	4	Wis MH900	2F	H	** 8.05	WH MH90	41A	738	975	a	FD	102	8½x3x⅞	CP
29	.....(*)TH520-4	8–10	12900	198	Op	.....	13850	10.50/20D	10.50/24	Her HXE	6–5¾x6	935	4.5	610	198–2000	7–3½x17	Y	BL 7341	4	Wis MH911	2F	H	** 8.88	WH MH91	41A	738	975	a	FD	102	10¼x3x⅞	P
30	(D)..(*) CD20-4	2½–3	4095	143	Op	.....	5420	7.50/20D	7.50/20	Her DJXB	6–3½x4½	260	14.	178	79–2600	7–3x10⅜	Y	Fu 5A33	5	Tim MH811	SF	H	** 5.57	TWH MH81	41H	267	452	a	TX	60	7½x2½x.11	CCC
31	(D)..(*) CD30-4	3–3½	4425	143	Op	.....	5615	7.50/20D	8.25/20	Her DJXC	6–3¾x4½	298	14.	194	90–2600	7–3x10⅜	Y	Fu 5A33	5	Tim MH822	SF	H	** 5.56	TWH MH82	41H	281	527	a	TX	60	7½x2½x.11	CCC
32	(D)(*)CD55DR-4	5–6	8412	158	Op	.....	9800	9.00/20D	9.75/20	Her DRXB	6–4⅝x5¾	474	14.	350	124–2200	7–3x13¾	Y	Fu 5A62	5	Wis MH888	2F	H	** 6.36	WH MH88	41H	738	975	a	FD	72	9½x3x¼	CC
33	(D)..(*) CD70-4	6–7	11350	161	Op	.....	10775	9.75/20D	9.75/22	Her DRXB	6–4⅝x5¾	474	14.	350	124–2200	7–3x13¾	Y	Fu 5A620	5	Wis MH899	2F	H	** 6.36	WH MH89	41A	738	975	a	FD	72	10¼x3x⅞	CC
34	(D)..(*) CD80-4	7–9	12150	161	Op	.....	11315	10.50/20D	10.50/22	Her DRXB	6–4⅝x5¾	474	14.	350	124–2200	7–3x13¾	Y	Fu 5A620	5	Wis MH900	2F	H	** 7.14	WH MH90	41A	738	975	a	FD	72	10¼x3x⅞	CP
35	(D)(*)THD515-4	7–9	14435	198	Op	.....	13300	10.50/20D	10.50/22	Her DHXB	6–5x6	707	14.	530	176–1800	7–3½x17¼	Y	BL 7341	4	Wis MH900	2F	H	** 7.14	WH MH90	41A	738	975	a	FD	102	8½x3x⅞	CP
36	(D)(*)THD520-4	8–10	15135	198	Op	.....	14500	10.50/20D	10.50/24	Her DHXB	6–5x6	707	14.	530	176–1800	7–3½x17¼	Y	BL 7341	4	Wis MH911	2F	H	** 7.95	WH MH91	41A	738	975	a	FD	102	10¼x3x⅞	P
37	Oshkosh.....JCB	2	2885	153	200	14000	5900	7.00/20D	9.00/20	Her JXC	6–3⅝x4¼	282	5.3	197	85–3000	7–2½x10H	Y	Fu	5	Own JCB	SF	H	4.4–5.2	Own JCB	L4IH	335	578	a	TX	71	6x3½x¼	P
38	.....JD	3	3490	153	200	15500	6050	7.50/20D	9.00/20	Her JXD	6–4x4¼	320	5.3	224	94–2800	7–2½x10H	Y	Fu	5	Own JD	SF	H	4.4–5.2	Own JD	L4IH	335	578	a	TX	71	6x3½x¼	P
39	.....B3S	3½–4	5140	146	201	21500	8250	10.50/20S	10.50/20	Her WXC3	6–4¼x4½	383	4.7	265	106–2800	7–2⅝x13¾	Y	Fu	5	Own B3S	SF	H	4.8–7.8	Own B3S	L4IH	510	867	G	TX	78¾	7x3x½	TfL
40	.....B3D	4	5590	146	201	23000	8250	10.50/20S	10.50/20	Her WXC3	6–4¼x4½	383	4.7	265	100–2400	7–2⅝x13¾	Y	Fu	5	Own B3D	2F	H	5.0–8.4	Own B3D	L4IH	560	867	G	TX	78¾	7x3x½	TfL
41	.....C3S	4–5	5635	146	201	23800	8700	9.75/20D	11.25/20	Her YXC2	6–4½x4¾	453	4.4	300	100–2400	7–3x14	Y	Fu	5	Own C3S	SF	H	6.0–7.8	Own C3S	L4IH	630	867	G	TX	82	7x3x½	TfL
42	.....C3D	4–5	6185	146	201	24000	9575	9.75/20D	11.25/20	Her YXC2	6–4½x4¾	453	4.4	300	100–2400	7–3x14	Y	Fu	5	Own C3D	2F	H	5.6–8.4	Own C3D	L4IH	630	975	G	TX	82	7x3x½	TfL
43	.....W-500	5	6165	150	204	25000	10600	10.50/20S	11.25/20	Her RXB	6–4½x5¼	500	5.4	330	110–2200	7–3x12¾	Y	Fu	5	Own 500	2F	H	7.2–8.6	Own 500	L4IH	630	975	G	TX	82	8¼x3x⅜	Tf
44	.....W-600	6	6750	150	204	26000	11100	10.50/20D	11.25/20	Her RXBO	6–4½x5¼	500	5.4	360	121–2200	7–3x12¾	Y	Fu	10	Own 600	2F	H	7.27–8.6	Own 600	L4IH	630	975	G	TX	82	8¼x3x⅜	Tf
45	.....W-700	6–7½	6900	150	204	29000	11500	10.50/20D	11.25/20	Her RXCO	6–4½x5¼	529	5.4	380	128–2200	7–3x12¾	Y	Fu	10	Own 700	2F	H	7.27–9.6	Own 700	L4IH	630	975	G	TX	82	10½x3x⅜	Tf
46	.....W-800	8	7975	150	204	31500	12300	10.50/20D	12.00/20	Her RXLD	6–4¾x5¼	558	5.4	405	141–2200	7–3x12¾	Y	Fu	10	Own FD	2F	H	8.05–9.15	Own FD	L4IH	630	975	G	TX	82	10½x3x⅜	Tf
47	.....BG3	10	8840	168	193	38000	14200	10.50/24D	13.50/20	Her HXB	6–5x6	707	4.5	455	148–2000	7–3½x16⅜	Y	BL	4	Own BG	2F	H	4.7–6.8	Own BG3	B4IM	666	975	G	TX	85	10x3¼x½	L
48	.....GD	10–12	10480	168	193	40000	14200	13.50/20S	13.50/20	Her HXE	6–5¾x6	935	4.5	610	199–2000	7–3½x16⅜	Y	BL	4	Own GD	2F	H	5.3–7.4	Own GD	B4IM	666	975	G	TX	85	10x3¼x½	L
49	**Walter**.....FND	3–4	5700	126	150	20000	7500	9.75/20S	9.00/20	Wauk WMK	6–4½x4¾	381	5.0	270	90–2200	7–2¾x10¼	Y	Own FJN	6	Own FNB	2D	H	6.0–8.0	Own FN	O4IA	450	670	G	FI	84	7x2¾x¼	T
50	.....FMD	4–5	7200	126	150	24000	8500	9.00/20D	9.75/20	Wauk WSRL	6–4⅝x5½	462	5.0	325	110–2200	7–3x13⅞	Y	Own FJD	6	Own FMB	2D	H	6.0–8.0	Own FM	O4IA	450	670	G	FI	84	12x3½x½	TB
51	.....FKMD	5	7500	126	150	28000	9000	9.75/20D	10.50/20	Wauk WSRK	6–4⅝x5½	517	5.0	345	120–2200	7–3x13⅞	Y	Own FJD	6	Own FJB	2D	H	6.0–8.0	Own FJ	O4IA	450	670	G	FI	84	12x3½x½	TB
52	.....FCKD	5–7	8400	126	138	30000	10500	9.75/24D	10.50/24	Wauk WSRK	6–4⅝x5½	517	5.0	345	120–2200	7–3x13⅞	Y	Own FC	6	Own FCC	2D	H	7.5–9.0	Own FC	O4IA	560	670	G	FI	84	13x3¾x½	TB
53	.....FCS	5–7	8600	138	162	30000	11000	9.75/24D	10.50/24	Wauk WSRK	6–4⅝x5½	517	5.0	345	120–2200	7–3x13⅞	Y	Own FC	6	Own FCC	2D	H	7.5–9.0	Own FC	O4IA	560	670	D	FI	96	14x3¾x½	TB
54	.....FBS	5–8	9900	138	162	31000	12000	10.50/24D	10.50/24	Wauk WRB	6–5x5⅝	677	5.5	465	150–2200	4–3½x11⅛	Y	Own FA	6	Own FCC	2D	H	7.5–9.0	Own FC	O4IA	560	890	D	FI	96	14x3¾x½	TB
55	.....FBRS	7–10	10500	138	162	46000	13000	11.25/24D	12.00/24	Wauk WRB	6–5x5⅝	677	5.5	465	150–2200	4–3½x11⅛	Y	Own FA	6	Own FCR	2D	H	7.5–9.0	Own FCR	O4IA	560	890	D	FI	96	14x3¾x½	TB
56	.....AXBS	5–8	10700	138	162	31000	12000	10.50/24D	10.50/24	Her HXE	6–5¾x6	935	5.3	610	200–2000	7–3½x16⅜	Y	Own FA	6	Own FCC	2D	H	7.5 –9.1	Own FC	O4IA	560	890	D	FI	108	14x3¾x½	TB
57	.....(D) ADKD	5–7	10000	126	138	29000	12000	9.75/24D	10.50/24	Her DRXB	6–4⅝x5¼	474	...	350	125–2000	7–3x13¾	Y	Own FA	6	Own FCC	2D	H	7.5 –9.1	Own FC	O4IA	560	890	D	FI	96	14x3¾x½	TB
58	.....(D) ADB8S	5–8	11000	138	162	32000	13000	10.50/24D	10.50/24	Cum HB6	6–4⅛x6	672	...	500	150–1800	7–4½x16	Y	Own FA	6	Own FCC	2D	H	7.5 –9.1	Own FC	O4IA	560	890	D	FI	108	14x3¾x½	TB
59	.....(D) ADVD	10–20	12500	126	162	65000	17000	13.50/24D	13 50/24	Cum HB6	6–4⅛x6	672	...	500	150–1800	7–4½x16	Y	Own FA	6	Own AV	2D	H	** 10.5	Own AV	O4IA	620	1020	D	FI	96	14x3¾x½	TB

Six-Wheelers

Wheels Driven

	(a) Autocar (1)	▼																													
60	.....C-4062	2F	.....	3150	164	182	.....	9580	8.25/20D	9.00/20	Own 358	6–4x4¾	358	5.5	250	89–2400	7–3x12⅝	Y	Own RL5	5	Own DB	2F	H	6.49–7.89	Tim 35000	LO4IDV	466	694	c	FD	84	9x3x¼	Tf
†61	.....C-7062	2F	.....	4550	164	182	.....	11020	9.00/20D	9.75/20	Own 408	6–4⅛x5¼	408	5.5	295	110–2400	7–3¼x13.76	Y	Own DF5	5	Own C	2F	H	7.20–8.57	Tim 35100	LO4IDV	580	930	c	FD	84	9x3x¼	Tf
†62	.....C-8062	2F	.....	5300	164	200	.....	12040	9.75/20D	10.50/20	Own 447	6–4¼x5¼	447	5.5	333	116–2400	7–3¼x13.76	Y	Own TF5	5	Own C	2F	H	7.20–8.57	Tim 26452	LO4IDV	580	930	c	FD	102	10½x3x⅛	TL
63	.....C-9062	2F	.....	6050	182	222	.....	13040	10.50/20D	11.25/20	Own 501	6–4½x5¼	501	5.5	375	127–2300	7–3¼x13.76	Y	Own TF5	5	Own CG	2F	H	7.69–8.52	Tim 26452	LO4IDV	466	694	c	FD	84	9x3x¼	Tf
64	c.o.e. U-4062	2F	.....	3350	106	124	.....	9250	8.25/20D	9.00/20	Own 358	6–4x4¾	358	5.5	250	89–2400	7–3x12⅝	Y	Own URL5	5	Own DB	2F	H	6.49–7.89	Tim 35000	LO4IDV	580	930	c	FD	103¼	9x3x¼	Tf
65	e.u.s. U-7062	2F	.....	5200	128	145	.....	12130	9.00/20D	9.75/20	Own 408	6–4⅛x5¼	408	5.5	295	110–2400	7–3¼x13.76	Y	Own UTF5	5	Own C	2F	H	7.20–8.57	Tim 26452	LO4IDV	580	930	c	FD	103¼	9x3x¼	Tf
66	e.u.s. U-8062	2F	.....	5500	128	145	.....	12760	9.75/20D	10.50/20	Own 447	6–4¼x5¼	447	5.5	333	116–2400	7–3¼x13.76	Y	Own UTF5	5	Own CG	2F	H	7.69–8.52	Tim 26452	TW84IA	631	930	c	FD	103¼	10½x3x⅛	T
67	e.u.s. U-9062	2F	.....	6100	128	145	.....	13600	9.75/20D	11.25/20	Own 501	6–4½x5¼	501	5.5	375	127–2300	7–3¼x13.76	Y	Own RL5	5	T-W 8D252H	2F	T	7.66–8.44	Tim 35100	T4IHV	667	1191	c	FD	59	9x3x¼	TfL
68	.....C-4064	4R	.....	4500	139	139	.....	10480	9.00/20D	9.00/20	Own 358	6–4x4¾	358	5.5	250	89–2400	7–3x12⅝	Y	Own DF5	5	T-W 8D252H	2F	T	7.66–8.44	Tim 35100	TWs4IA	798	1191	c	FD	62	9x3x¼	TfL
69	.....C-7064	4R	.....	6000	142	182	.....	11060	9.00/20D	9.75/20	Own 408	6–4⅛x5¼	408	5.5	295	110–2400	7–3¼x13.76	Y	Own C	5	Own CG	2F	H	7.20–8.57	Tim 35100	TWs4IA	998	1519	c	FD	62	10½x3x⅛	TL
70	.....C-8064	4R	.....	8200	142	182	.....	14170	9.75/20D	9.75/20	Own 501	6–4½x5¼	501	5.5	375	127–2300	7–3¼x13.76	Y	Own TF5	5	T-W 8D252H	2F	T	7.66–8.44	Tim 26452	TWs4IA	998	1519	c	FD	62	10½x3x⅛	TL
71	.....C-9064	4R	.....	9000	142	182	.....	15100	10.50/24D	10.50/24	Own 501	6–4½x5¼	501	5.5	375	127–2300	7–3¼x13.76	Y	Own TF5	5	T-W 8D252H	2F	T	7.66–8.44	Tim 35100	TWs4IA	998	1519	c	FD	84½	9x3x¼	TfL
72	e.u.s. U-7064	4R	.....	6500	109	118	.....	14000	9.75/20D	9.75/20	Own 408	6–4⅛x5¼	408	5.5	295	110–2400	7–3¼x13.76	Y	Own UDF5	5	T-W 8D252H	2F	T	7.69–8.52	Tim 26452	TWs4IA	998	1519	c	FD	84½	9x3x¼	TfL
73	e.u.s. U-8064	4R	.....	8500	109	118	.....	14000	9.75/20D	9.75/20	Own 501	6–4½x5¼	501	5.5	375	127–2300	7–3¼x13.76	Y	Own UTF5	5	T-W 8D252H	2F	T	7.69–8.52	Tim 26452	TWs4IA	998	1519	c	FD	84½	9x3x¼	TfL
74	e.u.s. U-9064	4R	.....	10500	109	118	.....	14000	10.50/24D	10.50/24	Own 501	6–4½x5¼	501	5.5	375	127–2300	7–3¼x13.76	Y	Own UTF5	5	T-W 8D252H	2F	T	7.69–8.52	Tim 26452	TWs4IA	998	1519	c	FD	84½	9x3x¼	TfL

(a) Price includes chassis & cab. † Denotes new models or change in specifications.

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Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	Maximum Tire Size Furnished	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Number, Diameter and Length Main Bearings	Governor Standard	TRANSMISSION Make and Model	Forward Spd's	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Std. W. B.)	FRAME Side Rail Dimensions	Type
1	Ster- FBT152 2C2F	8–10	4105	177	207	32000	9475	9.00/20D	9.75/20	Wau 6MZ	6–4¼ x4¾	404	5.7	267	89-2400	7–2⅝x12½	Y	Own U25	5	Tim SBT261H	SF	R5	5.57–7.80	Tim 35000N	L4F1HV	584	1024 a	TX	2I	91	10x3¼x¾	L
2	Eng.- FW8152 4R	8–10	4560	177	207	32000	9850	9.00/20D	9.75/20	Wau 6MZ	6–4¼ x4¾	404	5.7	267	89-2400	7–2⅝x12½	Y	Own UC25	5	Tim SW261H	2FF	R6	6.33–10.3	Tim 26450N	W84F1A	800	1352 A	TX	2I	91	10x3¼x¾	L
3	(7) FD8180 4R	10–12	8490	181	211	40000	13500	9.75/20D	10.50/22	Wau 6-125	6–4½ x5⅝	402	5.0	328	125-2400	7–3⅛x13⅞	Y	Own U29	4	Own SR210W	C1D	R9	9.98–13.25	Tim 27452N	W84F1A	792	1464 a	FX	2I	95	9¾x3¼x⅜	L
4	(7) HC8210 4R	12–18	11595	185	201	55000	14685	40x8D	10.50/24	Wau 6RB	6–5½ x6	677	5.3	470	145-2000	4–3½x11⅛	Y	Own UC9	4	Own SR210W	C1D	R9	9.98–13.25	Tim 27452N								
5	Truckatell																														
6	(c)TRC-2X250	2F	1653	154	216	20000	5900	7.00/20xD	7.50/20	Chev	6–3¼ x3⅜	216	6.2	170	78-3200	4–2⅜x5⅛		Chev	4	Eat 1265	SFd	U5	5.83–8.57	Chev	C6IHV	511	729 e		2I	83	7–2⅜x8⅜	
7	(c)TRC-2X400	2F	1869	157	218	24000	6100	7.50/20xD	8.25/20	Chev	6–3¼ x3⅜	216	6.2	170	78-3200	4–2⅜x5⅛		Chev	4	Eat 1465	SFd	U6	6.5–9.02	Chev	B6IHV	511	729 e		2I	83	7–2⅜x8⅜	
8	(c)TRC-2X250	2F	1893	152	202	21000	6050	7.00/20xD	7.50/20	Chev	6–3¼ x3⅜	216	6.2	170	78-3200	4–2⅜x5⅛		Chev	4	Eat 1465	SFd	U5	5.83–8.57	Chev	C6IHV	511	729 e		2I	83	7–2⅜x8⅜	
9	(c)TRC-2X400	2F	2109	154	204	25000	6250	7.50/20xD	8.25/20	Chev	6–3¼ x3⅜	216	6.2	170	78-3200	4–2⅜x5⅛		Chev-0	8	Chev	SFd	H6	6.4	Chev	C6IHV	511	729 e		2I	66	7–2⅜x8⅜	
10	(c)TRC-4XC26C 4R		2119	141	212	29000	7500	7.50/20xD	8.25/20	Chev	6–3¼ x3⅜	216	6.2	170	78-3200	4–2⅜x5⅛		Chev-0	8	Eat 1265	SFd	H6	6.88–9.56	Chev	C6IHV	511	729 e		2I	71	7–2⅜x8⅜	
11	(c)TRC-4XC29E 4R		2331	146	216	27000	6600	7.50/20xD	8.25/20	Chev	6–3¼ x3⅜	216	6.2	170	78-3200	4–2⅜x5⅛		Chev-0	8	Chev	SFd	H6	6.88–9.56	Chev	C6IHV	511	729 e		2I	71	7–2⅜x8⅜	
12	(c)TRC-4XC30E 4R		2695	116	186	30000	7280	7.50/20xD	8.25/20	Chev	6–3¼ x3⅜	216	6.2	170	78-3200	4–2⅜x5⅛		Chev-0	8	Eat 1265	SFd	H6	6.88–9.56	Chev	C6IHV	511	729 e		2I	71	7–2⅜x8⅜	
13	(c)TRF-2X250	2F	1618	156	214	20000	6000	7.00/20xD	7.50/20	Ford	8–3⅛ x3⅜	239	6.2	170	95-3600	3–2⅝x5⅝		Ford	4	Eat 1250	SFd	U5	5.83–8.57	Ford	F6IHV	501	836 a		2I	83	7–2⅜x8⅜	
14	(c)TRF-2X400	2F	1875	157	216	24000	6200	7.50/20xD	8.25/20	Ford	8–3⅛ x3⅜	239	6.2	170	95-3600	3–2⅝x5⅝		Ford	4	Eat 1450	SFd	U6	6.5–9.02	Ford	F6IHV	501	836 a		2I	83	7–2⅜x8⅜	
15	(c)TRF-2X250	2F	1808	123	188	21000	6050	7.00/20xD	7.50/20	Ford	8–3⅛ x3⅜	239	6.2	170	95-3600	3–2⅝x5⅝		Ford-0	8	Ford	SFd	U5	5.83–8.57	Ford	F6IHV	501	836 a		2I	67¾	7–2⅜x8⅜	
16	(c)TRF-2X400	2F	2074	124	190	25000	6250	7.50/20xD	8.25/20	Ford	8–3⅛ x3⅜	239	6.2	170	95-3600	3–2⅝x5⅝		Ford-0	8	Eat 1250	SFd	H6	6.88–9.56	Ford	F6IHV	501	836 a		2I	67¾	7–2⅜x8⅜	
17	(c)TRF-4XF26F 4R		2115	141	206	26000	6600	7.50/20xD	8.25/20	Ford	8–3⅛ x3⅜	239	6.2	170	95-3600	3–2⅝x5⅝		Ford-0	8	Ford	SFd	H6	6.88–7.87	Ford	F6IHV	501	836 a		2I	71¼	7–2⅜x8⅜	
18	(c)TRF-4XF29E 4R		2327	141	206	29000	7200	7.50/20xD	8.25/20	Ford	8–3⅛ x3⅜	239	6.2	170	95-3600	3–2⅝x5⅝		Ford-0	8	Eat 1250	SFd	H6	6.88–7.87	Ford	F6IHV	501	836 a		2I	71¼	7–2⅜x8⅜	
19	(c)TRF-4XF27F 4R		2265	118	183	27000	6720	7.50/20xD	8.25/20	Ford	8–3⅛ x3⅜	239	6.2	170	95-3600	3–2⅝x5⅝		Ford-0	8	Ford	SFd	H6	6.88–9.56	Ford	F6IHV	501	836 a		2I	71¼	7–2⅜x8⅜	
20	(c)TRF-4XF30E 4R		2568	118	183	30000	7380	7.50/20xD	8.25/20	Ford	8–3⅛ x3⅜	239	6.2	170	95-3600	3–2⅝x5⅝		Ford-0	8	Ford	SFd	H6	6.88–9.56	Ford	F6IHV	501	836 a		2I	71¼	7–2⅜x8⅜	
21	White..... 904	4R	3185	160	214	.....	7260	7.00/20D	8.25/20	Own 270	6–3¼ x4¼	270	5.8	200	91-2000	7–2⅝x10.7	Y	Own	4	Tim SBD 1000	2F	R5	5.93–8.30	Own	L6IHV	514	843 a	TX	2I	84¼	7x2⅛x¾	TF
22	 918	4R	4995	160	214	.....	9390	9.00/20D	9.75/22	Own 460	6–4¼ x5¼	460	5.0	320	123-2400	7–2⅝x13⅛	Y	Own	5	Tim SD253	2F	R7	7.33–9.11	Own	L6IHV	718	1224 a	TX	2I	84	8½x3⅛x⅞	TF
23	 920	4R	7550	158	235	.....	12250	9.00/20D	10.50/22	Own 529	6–4½ x5¼	529	5.0	390	134-2400	7–2⅞x13⅛	Y	Own 36B	5	Tim SDD452	2F	R8	8.15–10.2	Own 9D	O6IA	1079	1503 a	TID	2I	84	8½x3⅛x⅞	P
24	 922	4R	9350	158	235	.....	13875	10.50/24D	11.25/24	Own 580	6–4¾ x5¼	580	6.1	385	130-2300	7–3x15½	Y	Own 10BB	5	Tim SDD452	2F	R8	8.15–10.2	Own 13D	O6IA	1079	1503 a	CI	2I	84½	8½x3⅛x⅞	P
25	 991	4R	10990	149	237	.....	12560	9.00/20D	9.75/20	Own 362	6–3⅝ x5½	362	5.8	280	116-3000	7–3x10.8	Y	Own 51B	5	Tim SD252	2F	R7	7.00–8.40	Own 16D	L6IHV	718	1224 a	TX	2I	84	8½x3⅛x⅞	L
26	 950	4R	5320	160	237	.....																									

◆ Denotes new models or change in specifications. x Front 7.00/20.

NEWS CAST (Continued from page 46)

Federal Gets Big War Order

A $385,000 order for 178 two-and-a-half-ton trucks has recently been awarded to Federal Motor Truck Co. by the War Department. The trucks are all to be c.o.e. type with tandem drive six-wheel equipment, five-man cabs and all steel 14-ft. cargo bodies. Deliveries are to start within 60 days.

Owner Relations Division

News from South Bend has it that a new owner relations division has been set up by Studebaker for the purpose of developing and supplying a practical means for interchange of ideas between the corporation and individual owners. The new division will be under the general supervision of K. B. Elliott, vice-president with Joseph A. Martz, marketing executive, in direct charge.

Fleet Safety Course

It's never too late to go to school and it looks as though the course of Vehicle Fleet Safety being offered at the University of Michigan, Ann Arbor, Aug. 14 to 26, would be a "natural" for fleetmen. The course will be a part of the 2nd National Institute for Traffic Safety Training. James G. Hayden, Course Director, will supply full details. Address National Safety Council, 20 N. Wacker Drive, Chicago.

6 Years, 3 Drivers, No Accidents

What's believed to be a new high in mass no accident safety mileage was established recently when three drivers of Decatur (Ill.) Cartage Co. completed six years without an accident of any kind. Their names: Calvin Stoffregen, John Hoffman and Alfond Lindstrom. Their mileage: 1,125.000. Their awards: "No-accident driver award" medals from National Safety Council, gold watches from the company, congratulations from us all.

Morton F. Judd

Morton F. Judd, general manager of Raybestos Division, Raybestos-Manhatten, Inc., died at his home in Stratford, Conn., on June 28. He was associated with Raybestos for more than 20 years.

Lincoln R. Scafe (right) was recently named sales manager of the newly-created White Horse division of the White Motor Co. For the past 19 years he has been manager of the Cleveland Fisher Body plant

Getting Personal

Getting Personal this month discovers that Saunders Jones, vice-president of the White Motor Co., has resigned.

E. F. Hobbins, assistant general sales manager, has been appointed vice-president of White's Eastern region.

C. W. "Ted" Grange joins the Stewart-Warner Corp. as advertising manager of the Alemite Division. For 12 years he was a member of the advertising staff of the Curtis Publishing Co. He will be assisted by L. R. Light.

Carl B. Fehr has been named manager of Autocar's Cincinnati branch succeeding Carl H. Clark, resigned. Recently Mr. Fehr was vice-president, Central Tire Service of Cleveland.

Maremont Automotive Products has added three new men to its sales staff. They are Joe Grace, covering Kansas, Missouri, Oklahoma and Arkansas; Ed Boxer, covering New Jersey, Delaware and part of Pennsylvania; and Dick Price, covering the Chicago area.

Studebaker Endurance Run

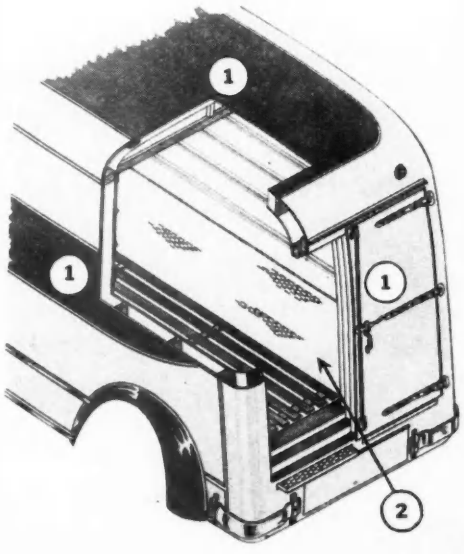
We'll have to chalk one up for the two Studebaker Champions that recently hit the Indianapolis track and covered 15,000 miles in 14,510 minutes. The average was 62.02 m.p.h. for 10 days of steady running, and gasoline mileage was 19.34 on one and 18.17 on the other. Mechanical difficulties were limited to the failure of one fan belt.

Extra Tomorrows OF LOW-COST SERVICE FOR *Today's New Designs*

Where to Specify HASKELITE Panels for the Latest "BODY OF THE MONTH"
(Described elsewhere in this issue)

1 PLYMETL—*For Side Panels and Roof* of great strength and stiffness. Permits minimum number of framing members, increased capacity, lighter weight, finer surface for display. *For Cab and Rear Doors* that will stay in alignment permanently and last as long as the rest of the body.

2 PHEMALOID—*For Flooring.* Large panels permit absolutely dust-tight, one-piece floor construction. Provides greater strength at less than half the weight of 2" oak.



Specify Panels By HASKELITE

● Unquestionably the modern designer has done much to bring economical operation, light weight and smart appearance to the truck body field. Yet the advantages of these qualities can be realized most fully only when construction includes the use of Haskelite Panels—products which to great extent made modern design practical.

Haskelite PLYMETL, for example, pioneered light weight framing. This steel faced plywood, inherently stiff, strong, yet light in weight, eliminates unnecessary structural members and so increases payload per operating dollar. Great endurance and strength mean years of extra service and low maintenance expense. And its smooth non-wavy surface gives unexcelled opportunity for effective advertising display.

Phemaloid Compound Lumber for the first time permits single piece dust-tight floor construction besides providing important savings in weight and added strength to bodies.

Whatever your body building problem, we urge you to check into *all* the special advantages made practical by Plymetl and Phemaloid. To Builders we say: Our engineers—experts in body building since trucks were "motorized wagons"—are ready to cooperate with you in working out the best applications of these products to any design. To Fleet owners: Benefit by calling for Haskelite Panels when discussing bodies with your builders.

HASKELITE MANUFACTURING CORPORATION
208 West Washington Boulevard, Chicago, Illinois
Offices in Detroit, New York, Los Angeles

When writing to advertisers please mention Commercial Car Journal

NEW PRODUCTS

(CONTINUED FROM PAGE 44)

Cooling System Solvent

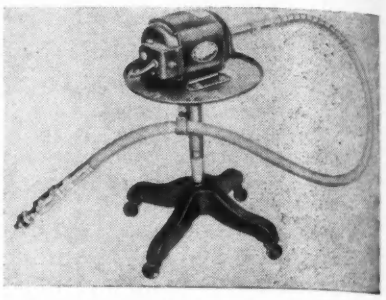
An acid-type cleaner that actually dissolves rust in automobile cooling systems has just been announced by the du Pont Co. The new product is known as "Cooling System Cleanser."

Wherever rust, scale, or scum are located—in the radiator core, engine block, pipe connection, or suspended in the system—the new cleanser will remove them completely without injury to rubber, aluminum heads, or other metal parts. Thus, when the radiator is drained after using the new chemical, all the rust and scale flow out with the solution in which they have been dissolved.

In the chemical action, the cleanser, it is announced, differs from other acid-type radiator cleaning products, which only loosen rust particles from the engine walls but do not dissolve them.

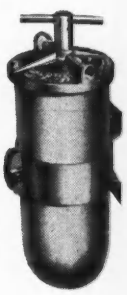
Flexible Shaft Tools

A new, low-priced line of flexible-shaft tools, for grinding, polishing, buffing, rubbing, wire brushing, sanding, filing and drilling operations, has been announced by the Stow Mfg. Co., Inc., Binghamton, N. Y. The new line, to be known as the Stow junior, has been designed as companion units to the Stow heavy-duty tools. Motors of either ¼, 1/3 or ½ hp. can be had, with two choices of speeds—1725 or 3450 r.p.m. Full details from the makers.



Baldwin Oil Filter

A new model D-7 removable cartridge oil filter has been introduced by the J. A. Baldwin Co., Inc., Spooner, Wis. An important feature of the unit lies in the speed with which cartridge changes may be made. Because both oil lines are attached to the removable head, the entire filter may be removed in an instant for dumping and cleaning. Full details may be secured by writing the company at above address.



Easy Electric Sander

A portable all-electric reciprocating motion sander, which can also be used for rubbing and polishing, has been introduced by the Detroit Surfacing Machine Co., 7433 West Davison, Detroit. Known as the Easy Electric Sander, it is adaptable to a wide range of new and refinishing applications on flat, curved and irregular surfaces. Light weight of only 6¼ pounds, comfortable grip, convenient switch control, smooth reciprocating motion, insure easy, one-hand operation on horizontal or vertical surfaces. Ample power is furnished by a sturdy, ball bearing, Universal motor, operating from any A.C. or D.C. electric light socket.

Spray Unit

A new streamlined portable spray unit weighing only 40 lb. and powered by a General Electric motor has been introduced by the Binks Mfg. Co. A unique feature is the use of the streamlined "cowling" as an air duct in conjunction with two powerful suction and blowing

(TURN TO PAGE 62, PLEASE)

SAFETY

THE SERVIS RECORDER *Helps Prevent*

ACCIDENTS BY *Removing* the INCENTIVE FOR **SPEEDING**

• A real discovery it is, yet very simple like all important discoveries. ***Making up wasted time***—that's the cause of most speeding and accidents.

The cure? Make it impossible to "make up" wasted time. And that is what the SERVIS RECORDER does, by "drawing a picture" of all wasted time, so the driver can't make it up even if he does ***pull in on time.*** Write for folder—

"How to Prevent Trucks from Speeding and Having Accidents."

The SERVICE RECORDER Co.
1422 Euclid Ave., Cleveland, O.
Branches in Principal Cities

The Servis Recorder
Endorsed by Many Insurance Companies

OSHKOSH

Announces New Improved Models

AGAIN OSHKOSH LEADS:

In Design
In Construction
In Value

(Backed by 19 years' successful 4-Wheel Drive building)

- New Low Streamlined Design
- New Shock-proof Steering
- New Large Roomy *Air Conditioned* Cabs
- New Heavy Double Reduction Axles

— **OSHKOSH AUTOMATIC LOCKING CENTER DIFFERENTIAL**

The New Models W500 W600 W700 W800 W900

Ranging from 5 to 10 ton capacity

Oshkosh 4-Wheel Drive — Best for Snow Removal and ALL Hard-to-do Work

Dealers: Good territory is available. Writes us today.

OSHKOSH 4-WHEEL DRIVE SALES AGENCY

OSHKOSH, WISCONSIN, CABLE ADDRESS, "OSHMOTOR" OSHKOSH

Exclusive Sales Agency for Oshkosh Motor Truck, Inc.

When writing to advertisers please mention Commercial Car Journal

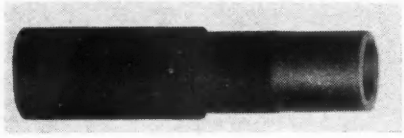
NEW PRODUCTS

(CONTINUED FROM PAGE 60)

fans, to provide forced draft cooling. At the same time the metal cover shields all working parts from getting harmed or doing harm. Full details from Binks Mfg. Co., 3114 Carroll Ave., Chicago.

New Thermoid Heater Hose

A new and improved line of car heater hose has been introduced by Thermoid Co., Trenton, N. J. Its tube is made especially tough to withstand boiling water and antifreeze solutions, so it will not deteriorate in

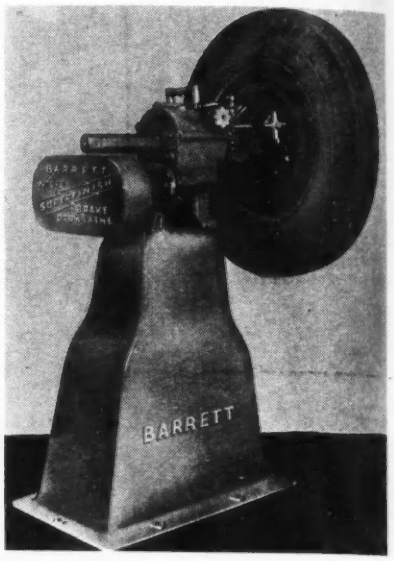


service. A red tube is used in two of the three constructions available. Its cover is oil, temperature resistant and scuff-proof to assure full protection to the carcass of the hose. It will not soften and collapse because it is built rigidly enough to prevent kinks, yet flexible enough to perform with modern motor mountings. Both wrapped and molded constructions are included. Full details from Thermoid.

Brake Drum Lathe

A brake drum lathe with standard passenger car equipment is manufactured by the Barrett Equipment Co., 2471 Washington Blvd., St. Louis, Mo.

Powered with a 1/3 hp., 110 volt, 50/60 cycle motor, this 3-speed brake drum lathe provides a speedy and accurate machine for passenger car and light truck

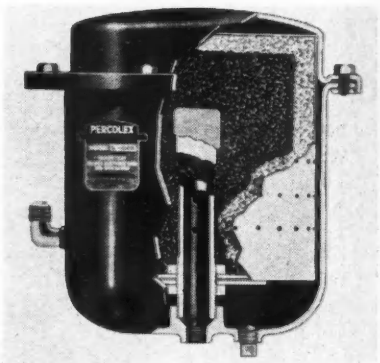


drums. Complete truck equipment can be purchased at additional cost for machining the largest truck drums.

Necessity of grinding to produce excellent results is eliminated by using a honing system after the drum has been machined.

Percolex Oil Filters

A new line of oil filters, marked under the name "Percolex," has been introduced by the Dushane Co., Inc., 1516 S. Wabash Ave., Chicago. According to the manufacturer's claim, six different filters are em-



ployed, including metal screen, cotton waste and special "earths." The cartridge is removable. For full details and a new catalog just off the press, write the makers.

Griptite Cement

Griptite, a new cement especially adapted to bonding rubber to metal, has been developed by St. Louis Rubber Cement Co., 3498 West Pine St., St. Louis, Mo. Users report the cement holds to almost everything, including rubber to enameled metal or concrete and felt to metal.

(TURN TO PAGE 126, PLEASE)

Mr. A. H. Nellen's informative articles on Truck Tires, reprinted from the Commercial Car Journal, free on request.

THE GREATEST RECENT TIRE DEVELOPMENT IS

LEE DOUBLE-LIFE CORD

Many manufacturers are now featuring in their advertising and sales projection a new type of cord, claiming for it qualities similar to or identical with Lee Double-Life Cord which represents a tremendous advance in the art of building tires. All Lee Tires, for a period of more than 4½ years, have been made with Lee Double-Life Cord construction which is protected by Re: U. S. Pat. No. 20316 and Canadian Pat. No. 368,136. These patents cover the use of low stretch, low gauge, high twist cord in pneumatic tires. It is good business to remember that the engineers who conceived and developed this idea also know best how to apply it.

No other tires have overcome internal heat generation from flexing as have Lee DeLuxe Tires with their Lee Double-Life Cord construction. Even the substitute synthetic cords which were highly promoted and which, under initial laboratory tests showed high heat resistance, proved less effective when they had to combat actual road test conditions, notably moisture and "growth."

It is just good operating to equip your fleet with Lee DeLuxe Tires made with Lee Double-Life Cord and your Lee dealer is ready to service your fleet with Lee Tires made with Lee Patented Double-Life Cord construction.

Copyright 1939 Lee Tire & Rubber Co.

LEE of Conshohocken Tires

GENERAL OFFICE: Conshohocken, Pa.
FACTORIES: Conshohocken, Pa., and Youngstown, Ohio

This Diesel-powered White Truck is equipped with Willard Batteries as are all the units operated by the Dairy Express Company of Fort Edward, N.Y.

"During all our years in the trucking business, we have never had a failure due to trouble with a Willard. WE CONSIDER THEM MONEY-MAKING FRIENDS. For instance the reports on our #3 White Diesel Tractor shows that the Willard Battery that came with the unit went 80,000 miles before being replaced with another Willard. Considering the severity of the starting service on Diesels and the long miles of operation on our 24 hour schedules we think this is very good performance. We always insist on Willard Batteries when ordering new trucks."

Dairy Express Company

Frank Hillman

President

• Mr. Hillman's letter, like hundreds of others in our files, proves that the growing preference for Willard Dual Rubber Batteries is founded on outstanding performance. It's the same in every field of truck operation. Thousands of truck owners and maintenance men will tell you that *Willard Dual Rubber Batteries last longer, crank faster* and *don't let you down!*

LET THEM PROVE IT

If you want proof that Willards will lower your cost per mile—put a new Willard Dual Rubber Battery in one or two of your trucks for a test. Check the results yourself against the batteries you are now using. We have a special test demonstration plan—write for details.

Department C-8 • WILLARD STORAGE BATTERY COMPANY • Cleveland, Ohio

IT'S ALL YOURS... THIS NEW WILLARD FLEET SERVICE PROGRAM!

To help you get "top" performance and maximum life from your batteries, Willard is now ready to render a NEW Fleet Service program. Here's what it provides...

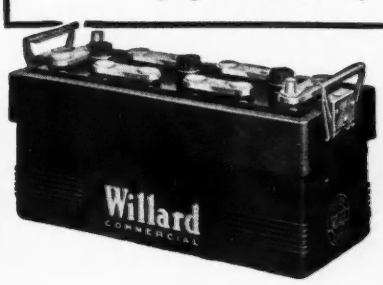
1. The new Willard Starting Service that guards against starting failures. Tests the entire starting system of your trucks quickly and accurately...under actual load conditions.

2. A new Record System that gives you a complete "life history" of each of your batteries, together with maintenance costs, costs per month and per mile.

3. Expert "clinical" instruction on improved methods of battery maintenance to increase the efficiency of your own maintenance crew.

4. Regular "battery care" service to operators who do not have a service department of their own.

Send for details of this NEW program TODAY!



Willard BATTERIES

When writing to advertisers please mention Commercial Car Journal

ECONOMICS

(CONTINUED FROM PAGE 41)

vantage of his larger capacity or by capitalizing on the lower operating cost, it is possible for the fleetman to reduce his overall expense.

But to what extent has this been accomplished by the fleets already operating this type equipment? In what light and to what degree do these fleets regard the other multitudinous claims of the makers? To what extent are other fleetmen in eligible fields watching the development of the package body? These are the questions COMMERCIAL CAR JOURNAL asked fleetmen in large eastern and midwestern trucking centers by personal calls and special correspondence. Their answers give a clue to the economic importance of the body.

Of the fleets interviewed, a total of 41 fleets, operating approximately 450 package-type units, reported the details of their operating experiences with these units as contrasted to the older models which they replaced. An analysis of these fleets showing the number of package-type units operated together with chassis and body sizes of both old and new equipment is given in the accompanying tables.

A study of Fig. 1 at once reveals the increased capacity of the new units is at once apparent. Consider, for instance, the fact that of the 23 Laundries reporting, 16 used smaller capacity chassis for their new bodies, five used the same capacity chassis and only two used larger capacity chassis. Yet eight of the fleets obtained substantially larger body capacities, nine gained slightly and not a single unit had less capacity than the older model.

Similarly, among the Bakeries it will be noted that 10 fleets used smaller capacity chassis, three used the same capacity chassis and one replaced, at least in part, horse-drawn equipment. Yet nine of these fleets obtained much larger bodies, five gained slightly and one lost 23 cu. ft. over its old specially-constructed bodies used on much larger chassis.

Even among the Department Stores, the picture is uniformly in favor of the new units. Here, owing to the specialized nature of their hauling needs all had special bodies, even on old equipment. Hence only one showed a marked increase in capacity, this fleet using same size chassis as before. The others all retained the same capacity, but all reduced chassis capacity size by one-half.

So much, then, for the tangible assets. What about the intangibles? What are these fleetmen doing with their larger capacities and are they taking full advantage of the potential assets thus created? How are the units working out from the standpoint of economy? What do their owners and drivers and maintenance men think of them?

Surprisingly, only two of the reporting Laundries said they were covering longer routes with the new units. This in spite of the fact that eight fleets had substantially larger bodies. Three others said they were now able to handle peak loads formerly farmed out. Sixteen said specifically that they were still covering the same routes as before but virtually all were able to cover the routes with greater intensity. Among their comments were these: "Better handling of the load." "Less repacking." "Handles full loads without repacking."

The Bakeries seem to have taken greater advantage of the rerouting possibilities. In this field five out of the nine who now have larger bodies have rerouted accordingly, while two others now carry the peak loads which they formerly farmed out. In all, seven replied specifically that they were covering their same old routes but with greater intensity. Comments included: "Can now get all the load inside—no roof racks, etc." "Much easier for driver to get in and out." "Additional hampers make the load more accessible."

Routing among the four Department Stores was split evenly—two covering the same routes as before, and two covering longer routes—in spite of the fact that only one had larger bodies. One replaced electric trucks of equal capacity, but speed and efficiency of the new units doubled the number of packages delivered. The 9-ft. length is an important factor in rug delivery.

All but four of the 41 fleets said their drivers liked the new units by an overwhelming majority. A great many have a definite award system by which oldest or best drivers are favored with the new equipment. Eight of the Laundries reported specifically on such an award system, four allotting the new units on a basis of seniority, three on accident records and one as the result of a sales contest. Four fleets put their new units on the routes where volume was heaviest, while another planned its routes to run the package units through high-

(TURN TO PAGE 66, PLEASE)

FIG. 2—GASOLINE MILEAGE

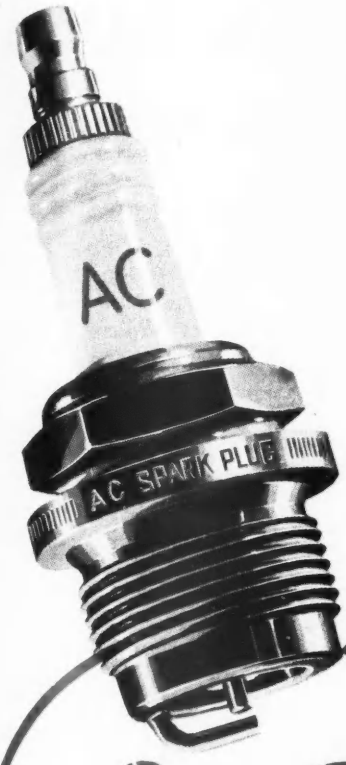
PACKAGE DELIVERY TRUCKS		REPLACED TRUCKS		
Miles Per Gal.	Chassis Capacity (Tons)	Miles Per Gal.	Chassis Capacity (Tons)	Mileage Change New Units Over Old	% Increase In Body Capacity
12	½	9	1½	+3	same
16	½	8	1½	+8	same
9.5	½	7.5	1	+2	same
10.5	½	8.5	1	+2	56
10.5	¾	9	1½	+1.5	13
8	1	6	2	+2	54
10	1	12	1	−2	50
12	¾	12	¾	same	43
12	¾	9	1½	+3	45
10	¾	7	1	+3	16
11	1	9.5	1½	+3.5	50
9	1	9	1½	same	13
12	½	10	1	+2	same
11.2	¾	8.9	1½	+1.3	.....
10.8	¾	9.7	¾	+1.1	.....
16	¾	9	1½	+8	.....
9.5	½	10.5	½	−1	110
10.5	½	10.5	1½	same	90
13	½	14	1½	−1	100
10	¾	9	1½	+1	60

FIG. 3—REGISTRATION COSTS

PACKAGE DELIVERY TRUCKS		REPLACED TRUCKS		
Registration Fee	Chassis Capacity (Tons)	Registration Fee	Chassis Capacity (Tons)	% Increase In Body Capacity
$30.40	½	$52.00	1	60
33.60	¾	33.60	1½	110
15.00	½	13.50	½	.....
24.00	¾	30.00	1½	.....
24.00	¾	27.00	1½	same
26.00	½	26.00	1	.....
28.00	¾	36.00	1½	13
26.00	1	35.00	1½	25
15.90	½	21.60	1	45
52.50	1	57.50	1½	50
24.00	1	20.00	1	

Corrected by AC

SKIPPING and RAPID WEAR



WHAT HAPPENED—

(An Indiana case history). Plug electrodes were wearing rapidly. Skipping was quite common at low and high speeds. Examination showed that fused oxide coating on lower insulators was causing the skipping. At AC's suggestion, 4,000-mile cleaning and regapping, and the next cooler plug in the AC Heat Range, were made standard.

WHY AC's SOLVED THE PROBLEM—

Here—from Indiana—is further evidence that AC's "spark plug formula" assures *complete* spark plug satisfaction. Yet, the formula is simplicity itself:

1 Standardize on the right *make* of plug
2 Select the correct *Heat Range*
3 *Clean and regap* all plugs every 3,000-4,000 miles

AC is always the right *make*. More trucks, buses, and cars are being equipped with AC spark plugs than with any other make. Another reason is the fact that AC spark plugs are constantly undergoing improvement so that their performance is always abreast of latest engine developments and fuel improvements.

AC's *Heat Range* is the most complete in the industry. It is designed so that spark plug users always get the type of AC plug which exactly fits their operations.

AC's new, improved Cleaner and *round* wire gap gauge are the choice of 70,000 service stations and repair shops for efficient cleaning and accurate regapping.

So, for longer plug life, freedom from road trouble, and better performance—*get* AC, and get the difference.

AC SPARK PLUGS

-for Thirty Years

THE QUALITY SPARK PLUG

International Trucks and Tractors, Allis-Chalmers Tractors; Diamond-T, White, GMC, and Chevrolet Trucks; Chevrolet, Pontiac, Packard, Oldsmobile, Nash, Buick, Cadillac and La Salle motor cars—these are some of the well-known tractors, trucks, and cars which use AC Quality Spark Plugs as standard equipment. Trust your spark plug requirements to the same brand of spark plugs which the leading, big-volume manufacturers select.

AC PLUG CLEANER

Better, Faster

With exclusive dual valve control, this Model "C" Cleaner cleans and dusts in one operation. Available with stand if desired.

Order from your AC Supplier

AC SPARK PLUG DIVISION • *General Motors Corporation* • **FLINT, MICH.**

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(CONTINUED FROM PAGE 64)
class residential areas where their increased advertising value would be effective.

Five of the Bakers specified various award systems while all but one of the Department Stores took advantage of the extra driver appeal by awarding the units on the basis of either seniority, or "best producers."

Opinion was almost unanimous with regard to the new trucks' "sex appeal." Many commented expressly on their advertising appeal, superiority, while others indicated what they thought of them by planning their routes to have the new units seen mostly in the better-class neighborhoods. Two fleetmen qualified their enthusiasms with the belief that the advertising advantage was temporary, lasting only so long as the general design was novel.

Only one from each of the vocations said the units had no advertising value. But in spite of the marked enthusiasm of the great majority for this particular aspect, not a single fleetman has been able to charge off any of the increased costs to his advertising department.

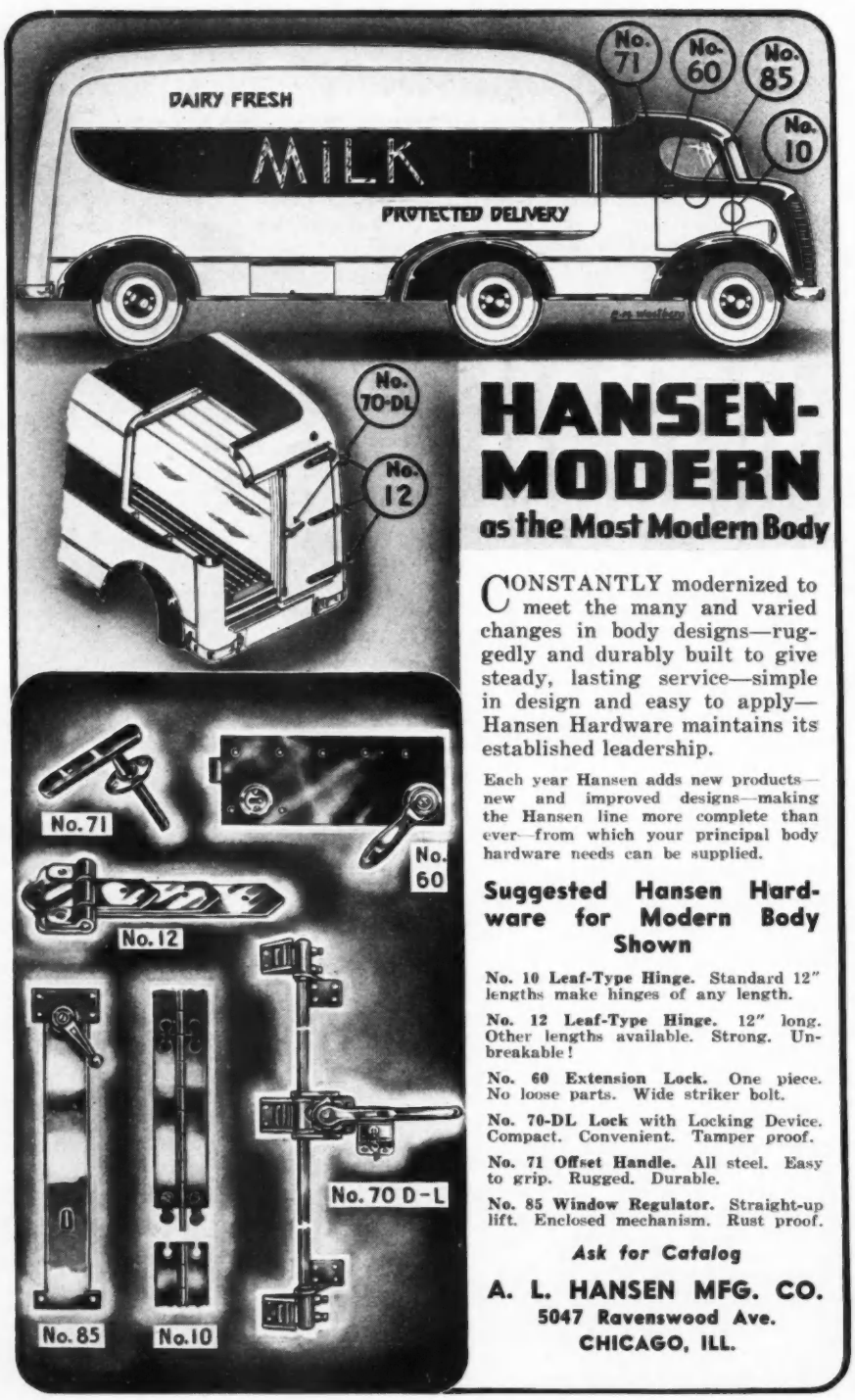
On the matter of service, enthusiasm was somewhat lower, for many of the operators felt that the driver's forward position made servicing more difficult. The Laundry fleets were divided on the question in the proportion of 10 who said they were more difficult to service, to seven who said they were not. The Bakers were equally divided while the Department Stores apparently experience little difficulty, only one raising any objection. Many of the operators qualified their objections by saying they were only slightly more difficult or that there were only a few specific operations that were more difficult. Among these were making adjustments on the engine (particularly in the case of six-cylinder models where engine quarters are cramped), changing rear wheels, and body repairs. One fleetman said that the front end of his new units was particularly vulnerable to collision and that when damage did occur, it was an expensive proposition to untangle.

In only one case, however, was the new type body criticized as an accident hazard, while eight sited proof of accident reductions which they attributed to the new units. A laundryman, for instance, said that his accidents had been reduced from three to zero per year during the first year of operation with the new trucks. Another had reduced annual accidents from two to zero; a third from six to one. Two had had no accidents during the last three years. A department store told of a 25 per cent reduction in accidents since putting on the new cars.

On the other hand, 20 fleets reported no change one way or the other in accident figures. The lone operator who felt the new bodies presented an accident hazard qualified his statement to include only the first few hours of operation with a new driver. He felt that a transition period for drivers to get used to the new position should be provided and to that end stipulated that all drivers using the new units for the first time should spend two days in special delivery service where the requirements were less severe than on regular runs.

Efforts to uncover a corresponding reduction in insurance rates were unproductive. Only one fleet, a Depart-

(TURN TO PAGE 70, PLEASE)



HANSEN-MODERN
as the Most Modern Body

CONSTANTLY modernized to meet the many and varied changes in body designs—ruggedly and durably built to give steady, lasting service—simple in design and easy to apply—Hansen Hardware maintains its established leadership.

Each year Hansen adds new products—new and improved designs—making the Hansen line more complete than ever—from which your principal body hardware needs can be supplied.

Suggested Hansen Hardware for Modern Body Shown

No. 10 Leaf-Type Hinge. Standard 12" lengths make hinges of any length.

No. 12 Leaf-Type Hinge. 12" long. Other lengths available. Strong. Unbreakable!

No. 60 Extension Lock. One piece. No loose parts. Wide striker bolt.

No. 70-DL Lock with Locking Device. Compact. Convenient. Tamper proof.

No. 71 Offset Handle. All steel. Easy to grip. Rugged. Durable.

No. 85 Window Regulator. Straight-up lift. Enclosed mechanism. Rust proof.

Ask for Catalog

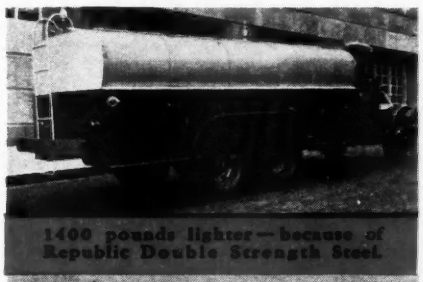
A. L. HANSEN MFG. CO.
5047 Ravenswood Ave.
CHICAGO, ILL.

Weight Builds Business

● As a result of the increased lifting capacities and the greater reach of this new type truck crane, sales have increased far beyond the expectations of the manufacturer, proving that while salesmen close sales, much of the manufacturer's selling is done months before in the engineering department.

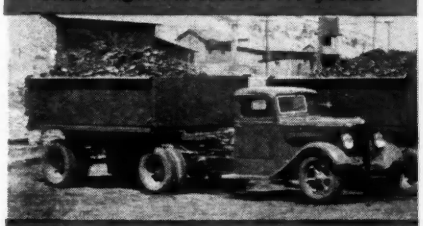
These new low-alloy, low-cost, easy-to-weld steels with twice the strength of ordinary steels give engineers a new material with which to design — for the elimination of dead weight — for faster manufacturing — for lower production costs — and for new fields where profitable selling can be accomplished.

Their energizing effect on the sales curve comes from the advantages they bring to the user. Elimination of dead-weight lowers operating costs. High abrasion and corrosion resistance lengthen service life and lower maintenance costs. Republic will send on request the engineering and metallurgical data that will enable your engineers to design these sales qualities into your product.



1400 pounds lighter — because of Republic Double Strength Steel.

By using Republic Double Strength Steel, weight was reduced 775 pounds.



Republic Double Strength Steel made possible the use of a smaller tractor.

Built of Republic Double Strength Steel this tank truck hauls 935 gallons more.

A saving of 1300 pounds here with Republic Double Strength Steel.

REPUBLIC STEEL CORPORATION

GENERAL OFFICES: CLEVELAND, OHIO • ALLOY STEEL DIVISION: MASSILLON, OHIO

REPUBLIC STEEL
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(CONTINUED FROM PAGE 66)
ment Store, had evidence that there was such a reduction and its figures were not available, being incorporated with similar reductions in the registration totals. Twenty-three fleetmen specifically stated that there had been no reduction.

On the important factor of overall operating costs the fleetmen were strong in their enthusiasm. All who answered the questoin of whether or not the new units had reduced their operating expenses replied in the affirmative. And it is reasonable to assume that most of those who did not answer the question experienced no increases or they would have voiced their opinion. Naturally most of the savings were accounted for through the use of smaller chassis still carrying the same or even larger loads.

Fifteen fleetmen reported definite savings in their gasoline consumption in spite of equal or larger loads and seven more reported that their mileages were the same. Fig. 2 shows 20 case studies taken from actual records giving comparable mileage figures for old and new units. The table also shows the relative size of chassis and bodies.

An idea of the relative cost of registration fees for old and new units is shown by the 11 case studies in Fig. 3.

In addition, other operators reported savings in respective registrations fees as follows: $8.50, $10, $9, $4 and $1.40. Three more reported their license costs were the same.

A box score on answers to a few remaining questions which the fleetmen were asked gives these results:

Fourteen Laundries said shorter length was an important advantage with regard to their particular garage, seven said it was not. The Bakeries line up 10 to 1 in favor of this feature, while the Department Stores split evenly, some appreciating the shorter length, others not concerned.

Ease of parking and generally better maneuverability brought enthusiasm from all sides. The Laundries lined up 16 to 3 in favor of this feature; the Bakeries, 12 to 1 and the Department Stores 3 to 1.

All operators were enthusiastic about the increased headroom, but greatest appreciation came from the Laundries who find it particularly suitable for their dry-cleaning departments. Many commented on this feature specifically. The Department Stores, too, find it a marked advantage particularly with regard to loading such items as floor lamps. All conceded the advantage of greater accessibility to the load permitted by a high center isle.

By and large the men who already operate this type of equipment like it. Most owners report overall savings in operating costs in spite of the increased original investment. Virtually all drivers are enthusiastic about them as a means of increasing not only their personal comfort but also their means of livelihood, because through increased efficiency they can increase their output.

But what about the fleets who do not own this type of equipment? Naturally this is a much harder field to cover, a much harder field from which to get opinions. But we did ask a lot of them what they thought of the idea and here are their replies.

Out of 21 laundries who do not now own package type trucks, 18 con-

(TURN TO PAGE 74, PLEASE)

Don't send a Boy on a Man's errand

USE A PLUG DESIGNED FOR HEAVY DUTY ON HEAVY DUTY JOBS!

Edison Spark Plugs for heavy duty service are not just an off-shoot from the Edison line for passenger cars. Each is specifically engineered for the ignition job expected of it . . . and the result is an increase in efficiency, economy and mileage that proves amazing to every "first" user.

No other spark plug offers all the features embodied in the new Edison. There is a type for every commercial use from the lighter jobs through to semi-diesels.

Try a set in just one of your units and let the savings per mile tell their own story. You'll be dollars ahead!

EDISON-SPLITDORF CORP.
West Orange, N. J.

Only Edison Spark Plugs include
ALBANITE CORE
BUILT-IN, LEAK-PROOF GASKET
CONDENSER ACTION FLAT GAP

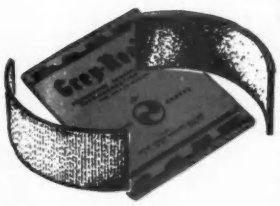
Edison Spark Plugs

ONE OF THE Thomas A. Edison INDUSTRIES

Grey-Rock CUTS COSTS OF FLEET OPERATION.....

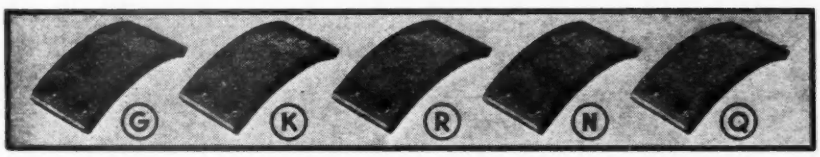
Whether your load is one ton or ten, clutch facings start it and brake linings stop it. You will save time and expense, repair and maintenance, annoyance and even life itself by making these products Grey-Rock. After years of experiment and field tests on 250,000 vehicles, Grey-Rock engineers have designed, built and classified the correct combinations of the correct products for every starting and stopping job.

Grey-Rock Balanced Blocks *for Light Trucks*



Two different materials—Grey-Rock Blocks (homogeneous, rigid molded linings with medium friction and orange edges) and HiWaY BloX (hydraulic compressed, rigid woven linings with higher friction and black edges) are used in combinations prescribed by Grey-Rock engineers to balance brakes on any vehicle using rivet-on blocks.

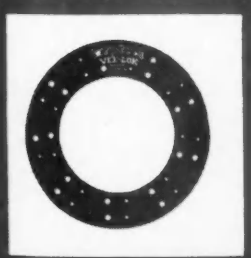
Grey-Rock Bolt-on Blocks *for Heavy Trucks*



Five types of lining with different characteristics to control wear, stopping power and heat checking, or drum scoring. Factory combined sets of G, K, R, N, or Q handle the toughest normal conditions. Where unusual operating conditions exist, Grey-Rock field engineers make an on-the-spot analysis and recommend *special* factory-combined sets.

TRANSPORT

Grey-Rock Vee-Lok Clutch Facing for *All Trucks*



They are especially fabricated with a triangular cross-section (formerly known as Grey-Rock Chevron) to stand the abuse of frequent shifting, long pull under heavy load, and high operating temperatures. Dense, fully impregnated and without joints, they overcome heavy-duty problems as no other facing does. They are standard equipment on an increasing list of commercial and industrial vehicles.

See your Grey-Rock Jobber about

Grey-Rock BALANCED BRAKE BLOCKS

UNITED STATES ASBESTOS DIVISION *of Raybestos-Manhattan, Inc.*, MANHEIM, PA.

BRAKE LININGS • CLUTCH FACINGS • FAN BELTS • HOSE • PACKINGS • RELINING EQUIPMENT

(CONTINUED FROM PAGE 70)

fess that interest has taken them to the point of serious consideration. Of these, 10 signified their intention to try at least one in the near future. And from the eight who are against them come the following arguments: Five think the price is too high, two think the units are not suitable for their needs, and one is holding out till he gets a truck "engineered complete by a truck manufacturer."

Eight out of ten Bakeries who do not have the package-type units told us they had considered them. Three expect to try them in the near future, the others share opinions with the laundrymen as stated above.

Strikingly, the Department Stores, which have shown the least interest to date, in terms of purchase orders, show the most interest in terms of desire to try. Sixteen department store executives told us they had none of this type equipment at present but only one has not considered them carefully, and 13 plan actually to try them in the immediate future.

Here's the Answer to

SAFETY.. and MILEAGE ON TIRE CHAINS

Campbell *Lug-Reinforced* Tire Chains

COLD WEATHER may seem a long way off . . . but *now* is the time to make up your mind to answer the question of safety over ice- or snow-covered roads. If you'll follow the example of other leading fleet operators you'll inevitably turn to Campbell Lug-Reinforced Tire Chains. You'll find that they offer the highest possible safety factor . . . and mileage that you would have believed impossible.

Campbell Lug-Reinforced Tire Chains are made of the finest case-hardened molybdenum steel . . . completely in ONE PIECE. There are no welded bars to break off. Consequently you not only get longer life, but complete protection for the entire life of the chains.

The exclusive, patented saw-tooth design guarantees positive all-way traction under severest conditions of ice and snow.

Call your jobber now. If he can't give you complete information on these revolutionary tire chains, write direct for details and special discounts to fleet owners.

INTERNATIONAL CHAIN & MFG. CO.
YORK • PENNA.

COST CURVES

(CONTINUED FROM PAGE 27)

side to the other every 10,000 miles, to equalize uneven wear caused by road tramp. Occasionally front tires are switched to the inner back mounting but rear tires are never switched to the front except in an emergency and then only until the truck reaches the shop.

Tires are inspected twice a day or more. Each truck goes through the service routine at the end of each run and the tires are carefully gone over at that time. A blunt screwdriver is used to remove every bit of gravel or other foreign matter from the tread, any cuts in the rubber are sealed with cement applied with a squirt gun. If the cut is bad, the tire is removed and sent to the tire shop for proper repair. Inflation is checked at this time and if there is an unusual amount of leakage the valve core is replaced. We find that valve cores should be replaced frequently and that by keeping valve caps on tight, pressures are kept up and tire mileage increased. The last thing done at the dock before a truck pulls away with a load is to check the tires and to bring them up to the proper inflation pressure. We carry slightly higher pressures than the tire companies recommend because our schedules are fast and a soft tire on a heavily loaded truck at high speed becomes a dangerous thing.

When we place a tire in service a card is made out and placed in the file, showing the make, size, tread type and serial number, and the truck and wheel upon which it is mounted. From that time until it is discarded every move that tire makes is recorded on the card. We can tell at any time how many miles it has traveled, over what roads it has gone, upon which wheels it has been mounted, how many times it has been flat and what caused it. In fact, we know just about all there is to know about the private life of that particular tire. It does cost money to keep records, but the things we have learned from our tire records enabled us to get 132,000 miles out of one pair, and has brought our general average up to 80,000 miles per tire.

LUBRICATING OIL:

Our experience with lubricating oil

(TURN TO PAGE 76, PLEASE)

NO BRAKE JOB IS TOO BIG or TOO TOUGH for WAGNER CoMaX BRAKE LINING

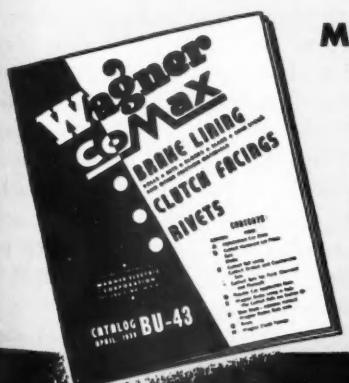
SURE—your problems or requirements may be "different"—but that is just another reason why you should be interested in what Wagner has to offer YOU. Wagner has "lived" with the brake problems of fleet owners since "way back when."

Consider the Wagner background of research and experience in brakes—and you'll recognize some of the reasons why the CoMaX line is so complete and why so many fleet operators are sold on CoMaX 100%.

Wagner CoMaX Brake Lining is non-compressible... It is homogeneous—having uniform texture . . . It has reinforced backing which permits deep seating of rivets and increases thickness for service . . . Easy on drums . . . Ideal for high speeds . . . Quiet . . . Smooth . . . Age-proof.

Available in sets, rolls, blocks and slabs—in all widths and thicknesses—for all makes and models of passenger cars, trucks, tractors, buses, etc. . . . Sells at competitive prices—notwithstanding high qualities.

Learn more about CoMaX . . . Write for Catalog and details NOW!



MAIL COUPON for FREE COPY

NEW WAGNER CoMaX Brake Lining Catalog BU 43, giving specifications, prices, etc., for passenger cars, trucks and buses, is just off the press. Every brake shop should have a copy. It's FREE. Mail coupon at right for your copy.

AUTOMOTIVE PARTS DIVISION B39-6 CCJ

Wagner Electric Corporation

6400 Plymouth Avenue, Saint Louis, Mo., U.S.A.

Gentlemen:

Send me complete information on Wagner CoMaX Brake Lining and my free copy of the new catalog BU-43.

Firm.....

Address.....

City.....State.....

My Jobber is.....

When writing to advertisers please mention Commercial Car Journal

(CONTINUED FROM PAGE 74)

and grease is quite different from the tire story. During our first few years we did not have all the trucks equipped with filters. We bought our oil first one place and then another; in fact we bought on price rather than on quality. Not too much attention was paid to different engines—oil was oil and we thought it would work as well in one motor as another. We did, however, keep reasonably close to oil changes every 1000 miles or less. This method did not give us the oil costs we felt we should have, and too, our repair costs were too high.

Our first move was to equip the rest of the fleet with filters. Next we turned a complete about face and instead of buying the cheapest oil we could find we bought the very best oil on the merket. The cost per gallon was in some cases twice what we had paid under the old plan. Each motor is now serviced with the weight oil recommended by the manufacturer and the viscosities are changed as the seasons change. Oil levels are checked as a part of the service routine at the end of each trip and oil is added if required to keep the level up to the proper point. Filters are checked and cleaned at the weekly inspection. Most of our fleet operate in the dust storm area. Mistletoe trucks must go through regardless of the weather and without these oil filters and good clean oil these dust storms would play havoc with cylinder walls, pistons, bearings, etc. We have never lost a motor from low oil or a clogged filter; many others in this area are not so fortunate.

Crankcase draining and flushing varies with the type of motor and its age. At the weekly inspection the crankcase is examined for sludge and the oil is checked for cleanliness and color. Cases are drained and flushed only when they need it and this varies from 10,000 miles down to 4000 on some of the town trucks. Even with the increased prices we have had to pay to get better oil we have succeeded in reducing our mileage costs from .0026 cents per mile in 1933 to .0010 cents in 1938.

PREVENTIVE MAINTENANCE:

As mentioned before, each truck is inspected when it comes into the garage at the end of every trip. This is regular routine and if the truck makes two trips in 24 hours it goes through the service routine twice. The driver's report is examined and any operation complaints are taken care of. Tires are inspected as described and the oil checked, tanks filled and the truck is washed and greased. It may seem that greasing a truck twice a day is lots of grease, but when I tell you that our drive shaft bearings last more than 150,000 miles average, it doesn't seem expensive.

Once a week each truck is given a more thorough inspection and a motor tune up. A motor analyzer is used to check the carburetor, plugs, points, fuel pump, valves, etc. Despite a rise of 2 cents per gal. in the price of gasoline during the last five years, our mileage costs on gasoline have remained stationary at .0128 cents for both periods. This has been brought about by an increase in miles per gallon from 9.33 in 1933 to 10.88 in 1938.

We keep a spare motor of each size built up ready to switch with a motor that needs overhauling or needs

(TURN TO PAGE 78, PLEASE)

BANISH DEADLY MONOXIDE GASES...RANK SMELLING EXHAUST ALDEHYDES WITH THE—

LEIBING DEGASSER

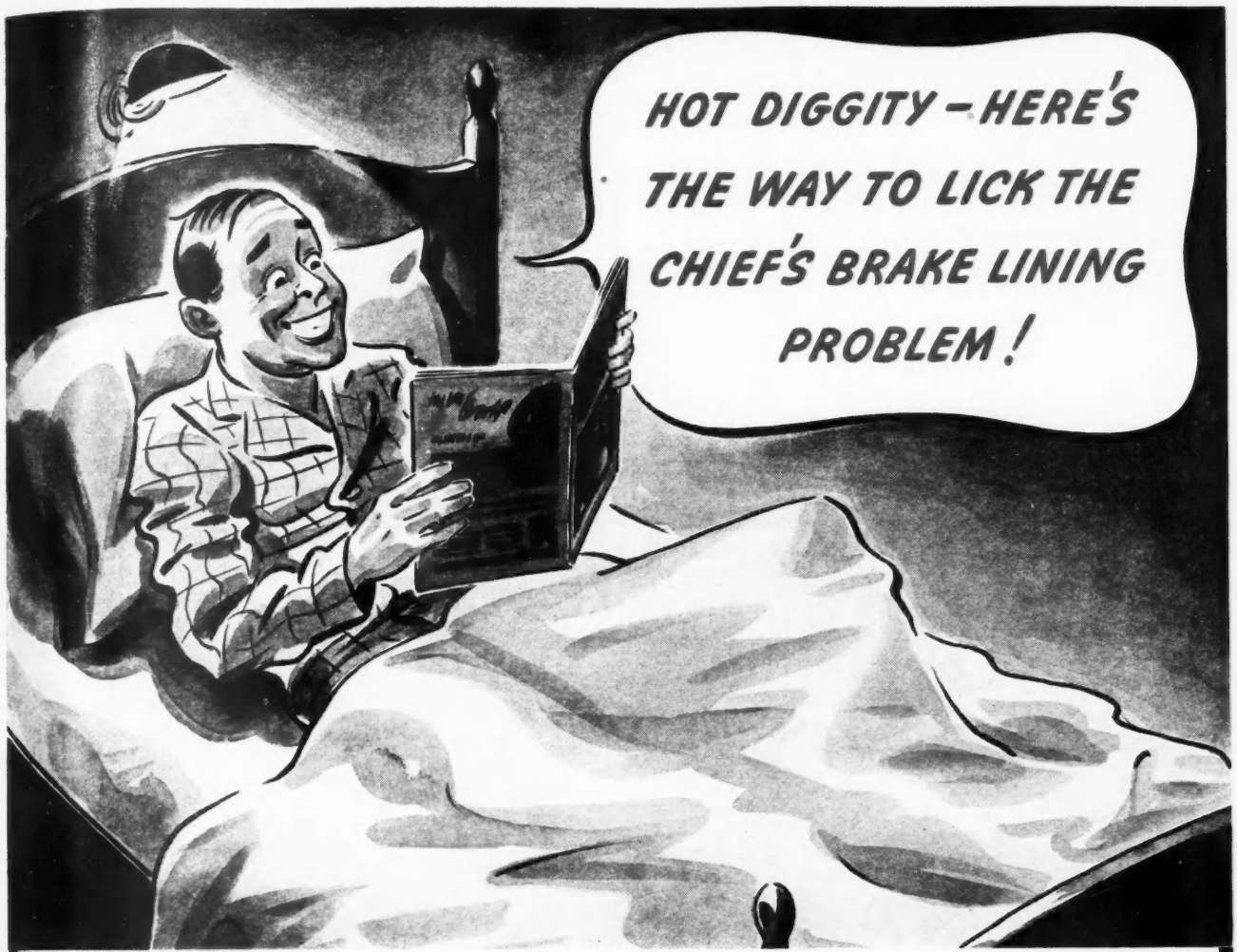
SHOWS 12% TO 27% REDUCTION IN GAS CONSUMPTION WITH BUS AND TRUCK FLEETS

IT'S BUILT IN FOR POSITIVE PERFORMANCE

THE Leibing Degasser is a time proved development which is now being rapidly adopted by hundreds of bus and truck fleets for its advanced safety features, amazing economy records and sharper motor operation. The excessive vacuum caused by each decelerating operation is now utilized to shut off ALL gas formerly drawn into the manifold and combustion chambers during deceleration. This eliminates excessive, rank smelling aldehyde fumes, poisonous monoxide gases and a wet intake manifold floor caused by induction of uncontrolled fuel intake. Because the gasoline supply is SHUT OFF at the source (the idling jet) at the moment of deceleration, a definite quantity of fuel is saved every time the motor is decelerated in traffic—and for stopping and starting. A folder fully descriptive of the Leibing Degasser will be mailed on request—or see YOUR nearest Zenith or Stromberg Carburetor dealer.

LEIBING AUTOMOTIVE DEVICES, INC.
DETROIT, MICHIGAN

ELIMINATES *All* EXHAUST GAS FUMES



No fooling . . . It worked, too!

● I got the idea from an ad I was reading. The next morning I rushed into the chief's office.

ME: Say, chief, why haven't we ever tried American Brakeblok Brake Lining? It's got a wire-mesh backing and a patented formula that make it *safe* and *long-wearing.* Sounds like it's just what we're looking for!

THE CHIEF: Well, why not try it? Go ahead. I hope it works!

I didn't waste any time. I put it on a couple of units and about three months later I rush into the chief's office again.

THE CHIEF: Well! What is it?

ME: Remember those two units we put American Brakeblok lining on, chief? I was just checking up on them and say, that lining's hardly worn at all —and the drivers say the brakes are the best they ever had!

* * *

It'll work for you, too! American Brakeblok Brake Lining is finding its way into more and more fleets, where it's showing maintenance superintendents how to get lower brake upkeep costs and at the same time improve safety records. American Brakeblok lining, with its strong wire-mesh backing and its patented formula, is safe *and* long-wearing. *Quick, smooth stops on any road in any weather. Greater mileage. Fewer adjustments. Write for information on specific applications for your units.*

AMERICAN BRAKEBLOK DIVISION OF THE AMERICAN BRAKE SHOE & FOUNDRY CO., DETROIT, MICHIGAN

American Brakeblok

BRAKE LINING

AMERICAN BRAKEBLOK

When writing to advertisers please mention Commercial Car Journal

(CONTINUED FROM PAGE 76)
more work than can be accomplished during the regular weekly tune up. In this way we can change motors and not tie up the truck.

About three years ago, Mr. Vance, our general manager, and I designed a body to meet our requirements. We wanted a body that would have a distinctive appearance and would enable us to handle our cargo better. Care was taken to see that the body length was correct for the wheelbase of the truck it was mounted on so as to secure the proper distribution of weight, and I feel that this also has materially reduced our maintenance costs.

All these factors—regular inspection, weekly tune up, spare motors and proper weight distribution, taken together have lowered our cost for repairs and parts from .0130 cents per mile in 1933 to .0090 cents in 1938, a saving of four mills per mile on the third largest item that goes to make up our maintenance costs.

I might also add that our trucks now average 100,000 miles before a major overhaul. We have several running that have traveled upwards of 400,000 miles and do not consider trading one off until it has more than 500,000 miles behind it. This lowers depreciation costs as well as maintenance.

While our labor is better paid now than was the case in 1933, even though a portion of that year was under the NRA, our labor costs for maintenance per mile is 2.3 mills lower. This we believe is due to the fact that our men turn out better work and more of it and the chief reason for that is cleanliness. The shop force consists of a day foreman and 11 men, night foreman and four men, and myself. Among the men we have motor mechanics, brake specialists, washers, grease men and helpers. Practically all mechanical work is done during the day. The only work sent out are special jobs such as rearching springs, re-winding generators and starting motors, and battery work; we handle everything else.

Any housekeeper would be proud to have her house as clean as we keep our shop. Dirt or mud brought in on a truck is cleaned up immediately; grease or oil dropped by a mechanic working on a truck is cleaned up before the job is completed. Cleanliness is stressed at all times. The men are required to change their coveralls as soon as they become soiled. Ample facilities are provided for the men to keep themselves clean and they must do it. No dirty mechanic can be found in our shop.

When any of the shop equipment is used it must be cleaned before it is left and small tools must be cleaned with solvent and wiped off before being returned to the tool chest.

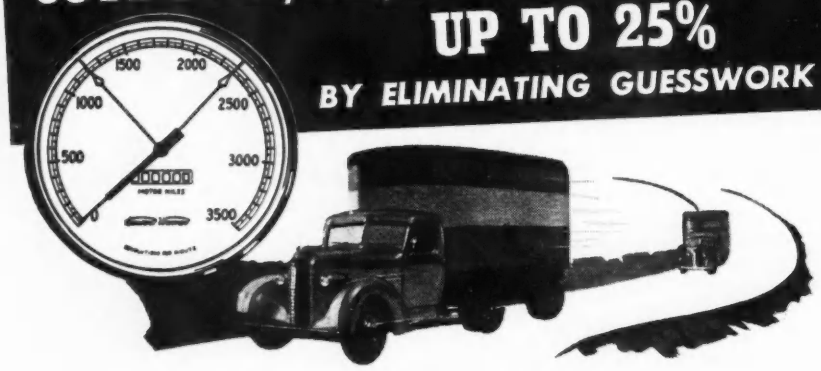
Once a week I inspect all the machines and small tools. If there are any that need repairing or sharpening or any attention to place them in first class condition, this is done. Those which cannot be brought up to our standard are discarded.

A dirty shop and poor tools lower a man's morale and the amount and quality of his work suffers. The fact that the management recognizes this and provides good equipment and clean surroundings has helped to develop a splendid spirit of cooperation on the part of every Mistletoe employee.

AMAZING NEW OPERATING METHOD

CUTS FUEL, OIL, REPAIR EXPENSE UP TO 25%

BY ELIMINATING GUESSWORK



Service Your Trucks on the Basis of

ENGINE MILES *instead of* ROAD MILES!

Know the ECONOMY RANGE *of Engine Speed*

BIG, successful fleet operators who have used the new Stewart-Warner Motor Mile Tachometer over a period of years say it's more than an amazing new truck instrument—IT'S AN ENTIRELY NEW OPERATING METHOD!

FIRST, it enables you, for the first time, to service your trucks on a basis of *motor miles* instead of *road miles*—it indicates engine speed in r.p.m., and records those revolutions-per-minute in terms of *motor miles.* Think of the rapid engine speed necessary when climbing in low gear—of the thousands of revolutions never recorded by a speedometer when the motor is idling during a long stop! By servicing your trucks on a basis of *motor miles,* you avoid heavy repair expense which often follows too-infrequent lubrication and servicing!

SECOND, the Stewart-Warner Motor Mile Tachometer shows your drivers the ECONOMY RANGE—that certain range of engine speed within which a motor operates at maximum torque, horsepower, and road speed efficiency consistent with fuel economy. *Two red pointers are permanently set at the upper and lower limits of this ECONOMY RANGE.* As long as the tachometer needle stays between these two points, you are getting economical operation. That means lower cost-per-mile in terms of fuel and oil consumption! *As much as 25% lower!*

Get the Facts Now! Mail the Coupon!

STEWART WARNER

MOTOR MILE TACHOMETER

STEWART-WARNER CORPORATION

STEWART-WARNER CORPORATION Dept. H
1876 Diversey Parkway, Chicago, Illinois

Send me all the money-saving facts about Stewart-Warner Motor Mile Tachometers. I am operating.....trucks.

Name.....

Address.....

City.....*State*.....

Firm Name.....

for

EVERY TRANSPORT PROBLEM

No matter what the cargo and the operating condition, Trailmobile can carry the load *safer* and at less cost per ton mile.

TRAILMOBILE

THE TRAILER COMPANY OF AMERICA CINCINNATI OHIO

The Easiest Pulling Trailer On The Road

CENTRAL SHOP

(CONTINUED FROM PAGE 29)

Tire, lubrication, and maintenance costs of our fleet were *reduced $.0102 per mile* between the years 1936 and 1938. The yearly average costs per mile were:

1936	$.0361 per mile
1937	.0338 per mile
1938	.0259 per mile

These reductions in costs can be attributed to the application of certain practices in maintenance since our active part in the operations began in January 1937. The economies which we have effected are the results of an application of the simplest rules of industrial management. These rules involved not only mechanics but humanics and finance also. Whatever has been accomplished is the result of investment capital made available by management and by the co-operation of management and employes. To devise efficient appearing ideas is one thing, but to produce economies is quite another problem. Unless proposed activities are accepted by management and employes—and executed freely and wholeheartedly, there can be little or no accomplishment. We have enjoyed the support of all involved in this operation and that fact accounts for the major part of the improved operating cost.

LUBRICANT COSTS

1936	$.0021 per vehicle mile
1937	.0014 per vehicle mile
1938	.0010 per vehicle mile

By our method of cost accounting, all lubricant costs are kept in one account. These costs cover engine and gear oils, water pumps, wheel bearings, and chassis lubricants. To control this item of expense, we first established a simple system of recording servicing periods by using a permanently ruled blackboard. Then, by reason of past experiences, materials and practices were gradually changed. These changes were approximately as follows:

(a) Engine Oil

(1) Re-refined oil was used which resulted in a lower cost per gallon.

(2) Crankcase change periods were lengthened from approximately 2000 miles in 1936 to 50,000 miles in 1938.

These steps were carefully noted by simple observations and laboratory checks to prevent an out-of-control condition. Maintenance, both labor and material, was also closely checked for possible increases which might be attributed to improper lubrication.

(b) Gear Lubricants.

Originally an extremely heavy lubricant was used in all transmissions and differentials. This did not appear to be logical nor economical; consequently, a study was made of the types of gears in service, resulting in certain desired qualities of lubricants being established. Laboratory tests were then made and a new lubricant selected. The new lubricant was SAE 160 grade. The unit cost per pound was approximately one-half the amount of the original. Lubricant change periods were moved from 25,000 miles to overhaul periods or approximately 75,000 miles. Mechanical costs did not increase as will be seen later in our comparison of labor and materials.

(c) Chassis Lubricants

The same general procedure was

(TURN TO PAGE 82, PLEASE)

On Handy Alone . . .

Steadily forward strides the march of Handy Governor perfection—forward until, in today's Visible Action model, progress almost seems to have reached the ultimate.

All the faithful, accurate automatic speed control that has marked the Handy models which have gone before. Any desired top speed—20 to 50 MPH—with only one screw to adjust, if you want change. And then the new Handy Visible Action facility that lets you actually SEE IT WORK. That means instant inspection, so no possible undetected tampering.

This Visible Action feature is one more in the long list of exclusive Handy merits which, taken together, give you governor performance you get ONLY WITH HANDY.

Ask your Handy Distributor. He alone can supply you.

HANDY GOVERNOR, *Detroit*
Division of King-Seeley Corpn.

HANDY *Visible Action* GOVERNOR

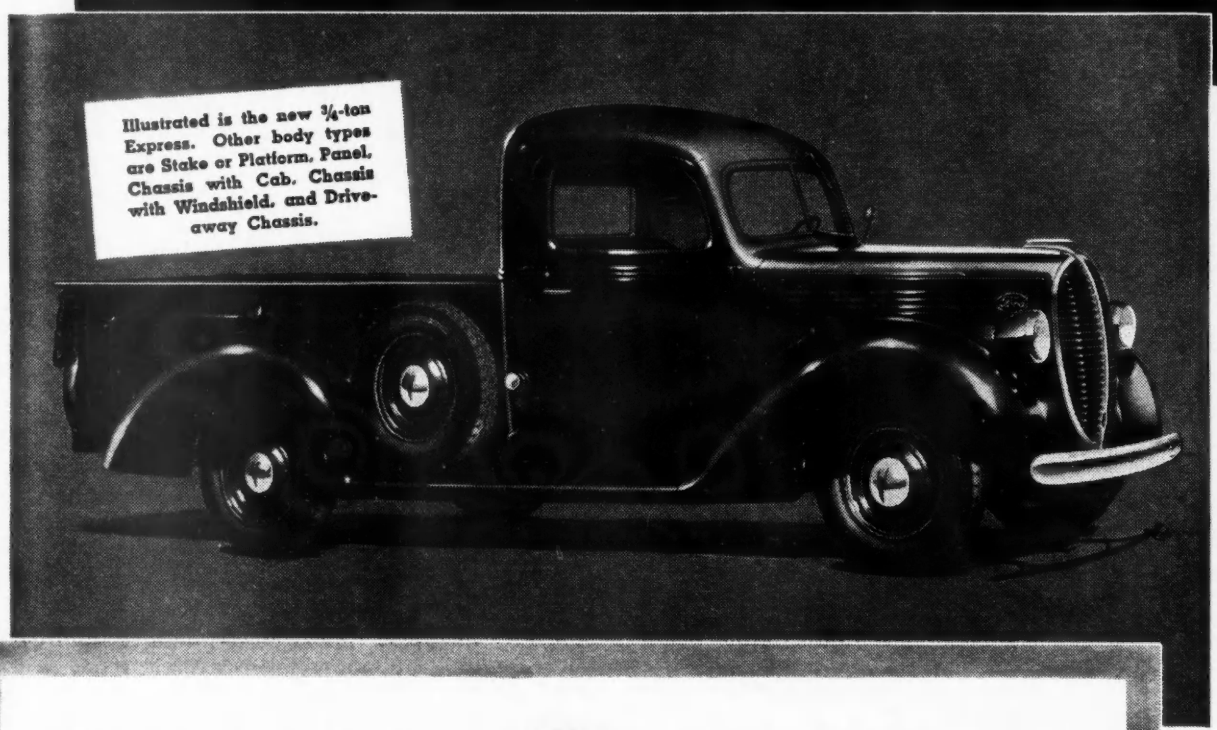
PROTECTION HANDY ECONOMY

A BRAND-NEW MEMBER

BROADENS THE LINE OF FORD V·8 TRUCKS

THE 3/4 TONNER

122-inch wheelbase—60 or 85 horsepower V-8 engine


Illustrated is the new 3/4-ton Express. Other body types are Stake or Platform, Panel, Chassis with Cab, Chassis with Windshield, and Drive-away Chassis.

The new Ford V-8 3/4-ton Truck brings to the hauler of lighter loads a better opportunity than ever to choose a unit exactly fitted to the needs of his job in power, size and body type.

The new truck is low in price, with exceptionally large body dimensions that will appeal to any one whose loads are in the 3/4-ton range.

It is sturdy, carefully designed and well built. All 3/4 Tonners have full-floating rear axles. Ask any Ford dealer to arrange a free "on-the-job" test for you.

The Ford V-8 line now includes Commercial Cars, 3/4 Tonners, One Tonners, Regulars, and Cab-Over-Engine models. 48 body and chassis types, 3 V-8 engines, 6 wheelbases and a wide selection of optional equipment.

FORD V·8 TRUCKS

FORD MOTOR COMPANY, BUILDERS OF FORD V-8 AND MERCURY CARS, FORD TRUCKS, COMMERCIAL CARS, STATION WAGONS AND TRANSIT BUSES

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(CONTINUED FROM PAGE 80)

used for chassis lubricants. Schedules were lengthened, based upon experience and less costly lubricants used. The average period is now 2500 miles or 30 days. Wheel bearings are packed (not hubs) at overhaul periods and at 25,000 mile intervals.

All lubricants including engine, chassis, and gear oils were limited to one weight or grade and that grade is used in all equipment summer and winter. This practice has reduced inventories materially.

TIRE COSTS

1936.... $.0049 per vehicle mile
1937.... .0044 per vehicle mile
1938.... .0038 per vehicle mile

These costs include new tires and tubes, repair materials, recapping, section repairs, and the cost of repairs and change labor where no company service is provided. It does not include tires which come on the new equipment. However, since no new equipment was purchased during 1938, these data are inversely affected but because of increased efficiency, the cost was decreased.

The principal reasons which account for the lowered costs of tires are:

a. Periodic inspection of brakes, wheel alignment, and mechanical condition of vehicle.
b. Improved driving.
c. Selection and utilization of quality tires.
d. Discarding of old tubes.
e. Discontinued recapping of old tires.
f. Improved highways.
g. Closer inspection of inflation.

To say which factor played the most important part in effecting these economies would be sheer folly since no record could be kept of the individual improved conditions.

With these lowered unit costs, we have also experienced fewer road failures which have resulted in the reduction of other costs not shown in this report.

OUTSIDE REPAIRS

1936.... $.0103 per vehicle mile
1937.... .0065 per vehicle mile
1938.... .0033 per vehicle mile

To this account we have charged all labor performed by outside shops. Furthermore, during 1936 such materials as were used with outside labor were also charged to this account. However, the data for 1937 and 1938 are comparable. The charges cover all emergency repairs done by outside shops, including body repairs, painting, machine work, upholstery, electrical unit repairs, etc.

Reductions were effected by installing a preventive inspection program which was scheduled upon a 5000 mile basis. Instruments, tools, and machine tool equipment were provided to make a semi-scientific detection of imperfections possible. A graduate mechanical engineer was employed and trained to perform the inspection. These two factors eliminated the bulk of road failures and outside repair to the electrical, fuel, and brake systems. By providing more accurately timed ignition, there are no bearing failures due to detonation. There are no valve failures on the road since lifter clearances are maintained. Generator and starter commutators last longer. Fuel pumps are exchanged before pressures vary or pumps fail. Spark plug life is greater and performance is main-

(TURN TO PAGE 84, PLEASE)

THE FLEET'S "IN"

DOLLARS WITH THESE MONEY SAVING JACKS

IMAGINE THESE PRICES FOR *WALKER JACKS!*

● Yes sir, the fleet is "in," more ways than one, with Walker. In dollar savings . . . extra margin of safety . . . dependability and trouble-free operation. Those things have made the Walker No. 900 Hydraulic Series *famous*. Complete line from 1½ tons to 20 tons each bearing the greatest name in Jacks—WALKER. See them at Jack Headquarters—your Walker Jobber.

No. 905	1½ tons...	**$2.80**
No. 912	2 tons.....	**$3.70**
No. 925	3½ tons...	**$6.95**
No. 935	8 tons...	**$11.75**
No. 945	12 tons..	**$19.50**
No. 950	20 tons..	**$32.50**

Dealer Net Prices — Slightly higher west of Rockies and in Canada.

WALKER MANUFACTURING COMPANY, RACINE, WISCONSIN

WALKER *leads in* JACKS

WHAT NEW BATTERY IS CUTTING COSTS FOR FLEET OWNERS ?

New SILVER JUBILEE

HEAVY-DUTY BATTERY SAVES MONEY, SAY BUS AND FLEET OWNERS COAST-TO-COAST

THIS AMAZING BATTERY is literally packed with extra cranking power...the kind of "kick" that makes big, stubborn engines say "Uncle." All the experience of 25 years in building commercial batteries has been concentrated in this newest Prest-O-Lite. Fiberglas protector mats in combination with select Port Orford Cedar separators add many full-power months to this battery's life. It's built, inside and out, to *deliver* when called on, winter or summer, long haul or short haul. Ask your local Prest-O-Lite dealer for complete details and technical data on the new SILVER JUBILEE Prest-O-Lite Heavy-Duty Battery. And prepare to accept a new standard of battery performance.

CHECK THIS EVIDENCE OF GREATER VALUE

1. Greater Power Capacity
2. New-Type Fiberglas Insulation
3. More Rugged . . . Durable
4. Cuts Maintenance Costs
5. Adds Profit to Pay Load

Prest-O-lite Battery Co., Inc., Indianapolis, Ind.

Manufacturing Plants at:

Indianapolis • Niagara Falls • Oakland
Oklahoma City • Toronto

25TH ANNIVERSARY

Prest-O-lite HEAVY DUTY BATTERIES

When writing to advertisers please mention Commercial Car Journal

(CONTINUED FROM PAGE 82)
tained at continued higher output. Carburetors are conditioned to compensate for wear, resulting in better engine performance and life. Fewer axle shafts break. The lighting system functions properly at all times safeguarding against accident and delays for repairs on the road. Fewer fire hazards exist by reason of improved wiring.

Driver co-operation has improved and consequently there has been a material decrease in the amount of body repairs. Where repairs have been necessary, our mechanics have adapted themselves to the work thereby eliminating the necessity of so many farm-out jobs.

By maintaining higher workmanship standards in repairing, and by better care on the part of the drivers while trucks are in operation, these motor vehicles now move on the road practically trouble free. The result is a much more safely operated machine which performs the job at a definitely lowered cost.

SHOP LABOR

1936	$.0120	per vehicle mile
1937	.0118	per vehicle mile
1938	.0108	per vehicle mile

Labor, as we keep these records, includes supervision, mechanics, tire repair men, and all service men. The rate per hour for mechanics increased 12 per cent between 1936 and 1938.

As the operations were being carried on prior to 1937, company repairs and service were being provided at four different stations. This meant that (1) supervision was carried on, in most instances, by remote control, (2) instructions entailed considerable duplication, (3) shop equipment was quadruplicated, and (4) stocks were quadruplicated; and not infrequently jobs were duplicated by reason of delayed information. Occasionally jobs were passed up because one shop thought that another shop was doing or had done that job.

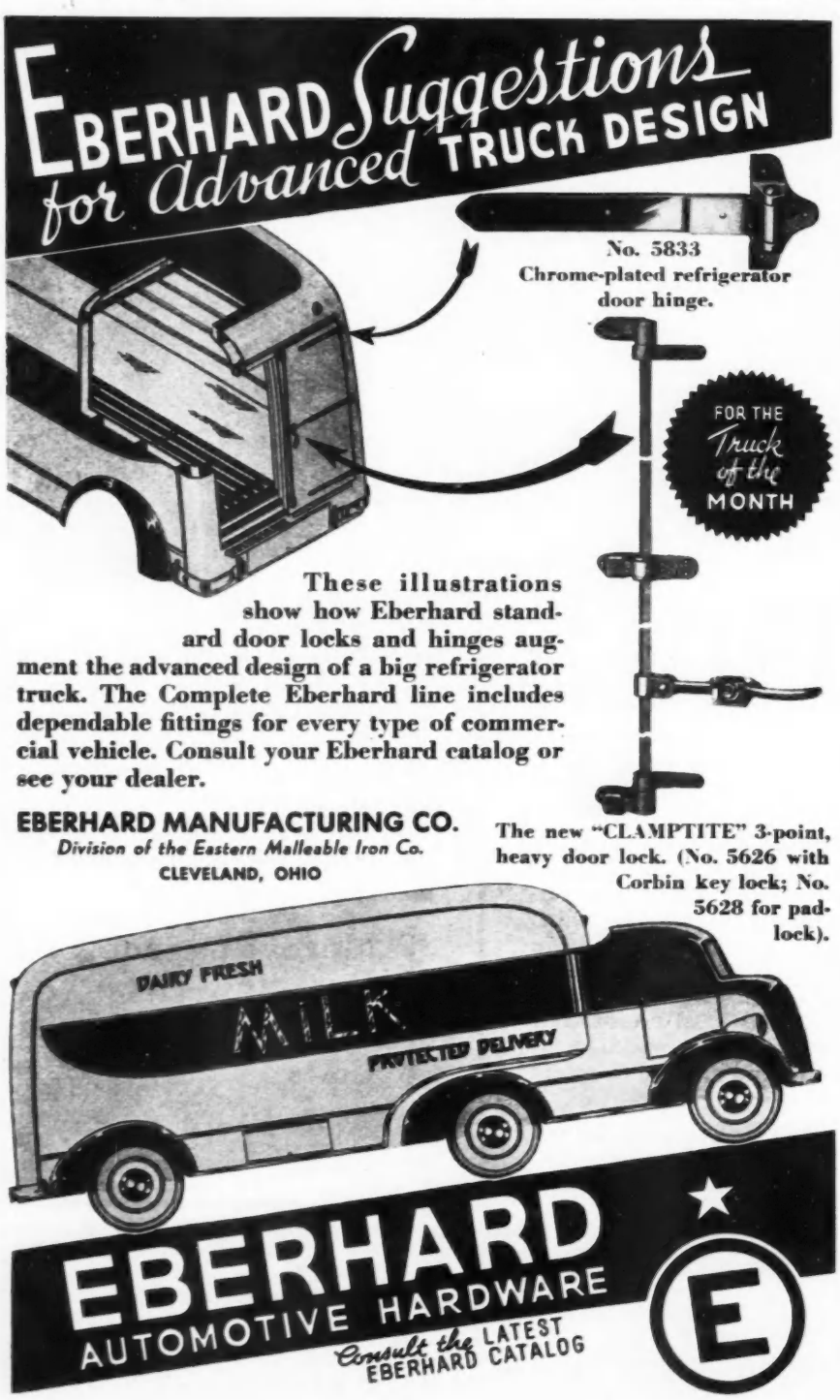
Considering the relatively short distance of the entire system, it was concluded that all major repairs should be made at Seattle; consequently, two shops were closed completely and the third was limited to service work only. This action made possible material reductions in parts inventories as well as in labor costs.

At all stations with the exception of those where shops are maintained, emergency service work is handled in outside shops. This volume is very low since all local vehicles are routed to the company shops at specific intervals for preventive maintenance inspection and repairs. In most instances, vehicles are operated the entire period without emergency repairs.

Lubrication of local vehicles, where no company service is provided, is performed by public service stations. The control is through the medium of service records kept at the garage. The work is authorized by requisitions.

By centralizing repairs and service we have developed a standardization of methods and materials. Furthermore, we have been able to assist the various workmen in increasing both the quality of their work, and the quantity they turn in per hour, and to do this with less physical effort and discomfort. In this respect we have by no means reached the ultimate in either quality or production.

(TURN TO PAGE 86, PLEASE)


EBERHARD Suggestions for Advanced TRUCK DESIGN
No. 5833
Chrome-plated refrigerator door hinge.
FOR THE Truck of the MONTH
These illustrations show how Eberhard standard door locks and hinges augment the advanced design of a big refrigerator truck. The Complete Eberhard line includes dependable fittings for every type of commercial vehicle. Consult your Eberhard catalog or see your dealer.
EBERHARD MANUFACTURING CO.
Division of the Eastern Malleable Iron Co.
CLEVELAND, OHIO
The new "CLAMPTITE" 3-point, heavy door lock. (No. 5626 with Corbin key lock; No. 5628 for padlock).
DAIRY FRESH
MILK
PROTECTED DELIVERY
EBERHARD
AUTOMOTIVE HARDWARE
Consult the LATEST EBERHARD CATALOG
E

TRIPLES CAPACITY
OF A MOTOR TRUCK
UTILIZING the reserve power of a motor truck to haul a Fruehauf Semi-Trailer is sound business judgment.
Motor trucks are built to pull, while Fruehauf Trailers are built to carry the load. The truck and trailer make an efficient, economical hauling unit with three times the carrying capacity of the motor truck.
FRUEHAUF TRAILERS

..and 1+1 STILL =3

Today, just as in 1918, *one* tractor-truck, plus *one* Trailer, has the load capacity of *three* straight trucks! Put another way, this means that a 1½-ton truck pulling the load on a Fruehauf will carry the same tonnage as a much larger truck which carries the entire load on its back!

The tractor-trailer unit averages 36% less than the heavy-duty truck in first cost. In operating expense, there is an average saving of 34% per mile. And the saving in depreciation is close to 50%—because, at replacement time, you buy only a 1½-ton truck chassis; the Trailer and body are good for 10 years or more of service.

Further, a tractor-trailer is "hinged in the middle," giving it a 4′ shorter turning radius than a truck with equal load space. Think what this means when the product to be hauled is bulky but light—you have your choice of body sizes without increasing engine size.

From every angle, the Trailer story is a story of lower haulage costs. Ask the Fruehauf men to tell you its application to your business.

WEIGHT-SAVING *AEROVAN*

Newest in the Fruehauf Trailer line, it embodies the light-but-strong airplane-type construction. It increases payloads 1500 pounds, and up! For complete facts, write for a free copy of our new AERO-VAN Booklet, just off the press.

☆

AMAZING *DUAL DIFFERENTIAL WHEELS*

Give four free-rolling tires per axle, instead of two. Users report that this individual wheel freedom Doubles Tire Life, Cuts Gas, Oil Costs 10 to 20%! Ask your nearest Fruehauf representative for a demonstration—*at your desk.*

FRUEHAUF TRAILERS

"Engineered Transportation"

Reg. U. S. Pat. Off.

FRUEHAUF TRAILER COMPANY • DETROIT, MICHIGAN • World's Oldest and Largest Manufacturers of Truck-Trailers

(CONTINUED FROM PAGE 84)

Standardized practices and improved workmanship have, in a large way, contributed to the lowered cost per mile.

When maintenance work was centralized, certain shop improvements were provided. However, no investment in shop equipment was made or is being made unless by reason of volume and use the purchase of such equipment is justified. The one exception is a necessity caused by known emergencies. Such emergencies occur infrequently.

Our shop is equipped with the accepted ordinary equipment including reamers, drills, universal valve and armature turning machine, drill press, welding outfit, ammeter, voltmeter, exhaust gas analyzer, and brake testing equipment. Practically all machine work is farmed out. It must be remembered that one cannot successfully operate any business unless the money invested therein is productive of reasonable earnings. When tools or machine tools are purchased, they must be operated and must produce results or they become an expense. We try not to be misled by the magnetic influence of chrome trimmed glossy enameled streamlined gadgets, all of which appeal to our desire for swell-looking shop equipment; but which all too frequently are not profit-producing necessities.

The major problem in the maintenance industry is foremanship. The prerequisites of this function are to plan the job, and by instruction to workmen, guide their willing efforts to a more direct and perfect end. Our principal job is primarily one of humanics and secondarily one of mechanics.

MATERIAL COSTS

1936	$.0067 per vehicle mile
1937	.0095 per vehicle mile
1938	.0068 per vehicle mile

The material costs were increased during 1937 since it was necessary to put the vehicles in good mechanical condition if we were to expect lower maintenance and operating costs in the future. The soundness of this reasoning is evidenced since reductions of total costs were effected. The fallacy of patching up or attempting makeshift repairs was kept alive, and this, in addition to producing future savings in material costs strengthened the morale not only of the mechanics but also of the vehicle operators. Again, the human factor was conceded to be the most important and was utilized to advantage. Recognition was given to the recommendations of manufacturers, their engineers, and other men of science and research by the utilization of their data and advice. Certainly their knowledge of the behavior of materials is superior to ours, and by our acceptance of this information, we have profited in the use and re-use of materials.

A part of the materials' cost increase during 1937 was due to the establishment of certain standardization of materials including accessories. As rapidly as was possible materials were standardized and as rapidly as our finances would permit, all such items were incorporated in the vehicle. This standardization has and will continue to lower costs because it will reduce replacement expenditures and also simplify main-

(TURN TO PAGE 88, PLEASE)

This Plant Produces Heavy Duty Transmissions Only!

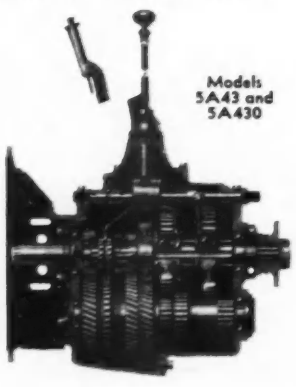
That's Why *It Pays* to Specify FULLERS

Naturally FULLER Transmissions operate just a little more quietly, shift just a little more smoothly, and have that small extra margin of stamina that reduces service work — speeds up hauling. For FULLERS are made by specialists working toward a single goal — to produce the world's finest heavy duty transmissions. When you buy trucks, specify FULLER Transmissions. Available in a wide range of unit, amidship, and auxiliary models that help you haul more payload per dollar.

FULLER MFG. COMPANY · KALAMAZOO, MICH.

FULLER TRANSMISSIONS

For Easy Shifting, Quiet Operation, Dependability



Models 5A43 and 5A430

Only One in a Thousand Commercial Cars has A DIESEL ENGINE...

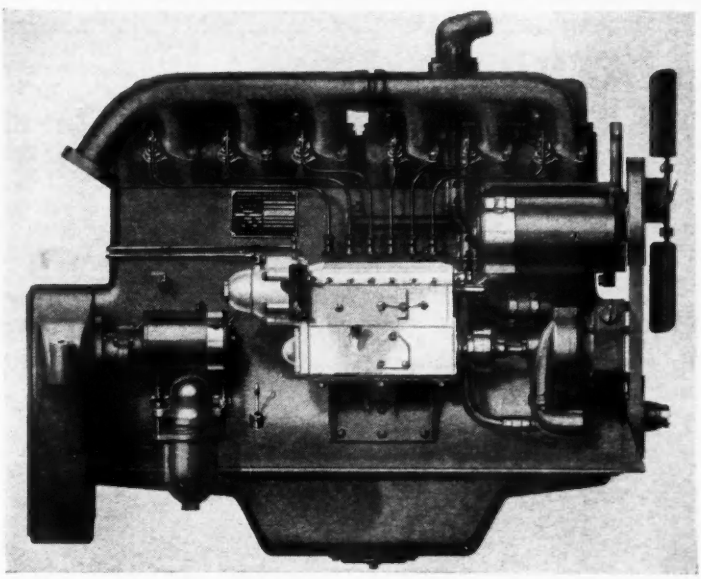
WHY?

Of the more than four and a quarter million commercial cars now operating in the United States, *only about one-tenth of one percent* are Diesel powered. *Why?*

Recently a very comprehensive survey was made among truck operators owning fleets of 200 or more vehicles. 92.8 per cent of them operated *no diesels* at all. *Why?*

In the combined fleets of those who are operating diesels — 99.72 per cent of their trucks are still gasoline powered. *Why?*

These men are not small operators. The largest fleet owner has 12,000 trucks; the next largest, more than 9,000. Why don't these experienced operators use diesel engines on all their trucks?



This 100 to 125 hp. Waukesha Truck Engine not only has all the economy of an oil engine but can be converted from oil to gasoline in 20 minutes *by simply changing the fuel system. Change of fuel involves no modification of internal parts.*

HERE ARE THE REASONS they give, in the order of importance:

(1) High First Cost; (2) Heavy Weight; (3) Smoke and Odor; (4) High Maintenance and Repair Costs; (5) Lack of Curb Service for Fuel and Lubricating Oil.

THE MULTI-FUEL POLY-CYCLE ENGINE IS THE ANSWER— *It Overcomes All of these Diesel Truck Owners' Objections:* As an oil engine, it operates on the Hesselman low-pressure cycle, utilizing positively timed spark ignition and giving users the resulting advantages—light weight, easy starting, simplicity, long life, low maintenance costs, and the ability to burn a wide range of fuel oils. In addition, it is convertible —practically a universal engine. With only minor accessory changes, it can be converted to operate on gasoline, butane, or natural or artificial gas.

Write for Literature.

WAUKESHA Multi-Fuel Poly-Cycle ENGINE

WAUKESHA MOTOR COMPANY
WAUKESHA, WISCONSIN
NEW YORK · TULSA · LOS ANGELES

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(CONTINUED FROM PAGE 86)

tenance procedures. Though the material costs for 1938 were .0001 higher than in 1936, it must be remembered that the bulk of the fleet was three years older. In terms of total miles the fleet was approximately 7,000,000 miles older than in 1936.

In summarizing our remarks, attention is again called to the yearly average cost per mile:

1936	$.0361
1937	.0338
1938	.0259

We realize that we have not stipulated detailed specific ways and means of accomplishing these results. Neither do we feel that this could be done since there are far too many variables and unknown quantities. However, we have attempted to indicate in these remarks, and will reiterate that these meager accomplishments are the results of applied . . .

HUMANICS: An understanding of why we behave as human beings, soliciting and securing the willing cooperation of fellow employes . . .

MECHANICS: (a) Application of the simple fundamentals of the behavior and use of materials, and (b) utilization of the specialized advanced engineering as is afforded us by the scientist active in industry and research.

ECONOMICS: A study of the relation of investments, their necessity, and earning ability with relation to operating costs and revenue.

STAINLESS STEEL . . . . and HOOF Cantilever GOVERNORS

That governor performance is directly dependent on the materials used in its construction cannot be over emphasized. Illustrated here, in actual size, are some of the vital parts of the Hoof Governor.

STAINLESS STEEL plays an important part in Hoof Governors . . . the 3/8" shaft; the butterfly, a full 3/32" thick; the ball bearings . . . wherever the parts are subject to corrosion, friction and sticking.

These, plus the heavy wall aluminum body and housing, the cantilever spring and diaphragm control assure every user of Hoof Governors a responsive, smooth performing device that will function year after year, without servicing or attention.

THE BALL BEARINGS

Friction destroys governor performance. Hoof Governors are free from friction. Three husky, self-contained, self-aligning ball bearings, with balls of stainless steel, at each end of the shaft and on lever arm, assure frictionless operation, smooth action and quick recovery, characteristic features of the Hoof Governor.

ACTUAL SIZE 7/8" 11/16" 5/8" O.D.

HOOF Exclusive CANTILEVER SPRING

Made to accommodate characteristics of any engine at any governed speed without affecting power up to governed speed . . . not subject to stretch or fatigue, thus maintaining its factory calibration . . . self-dampening, it eliminates use of cams, pistons, dash-pots.

OTHER FEATURES

The patented locked-in cover plate, making the governor tamper-proof . . . the diaphragm control, to prevent over-running by part throttle manipulation . . . each governor tested for power and performance on dynamometer.

Write for details on Hoof Brake Eyes, the Hydraulic Brake Safeguard and Hoof Fuel Economizers for Ford and Chevrolet Trucks.

HOOF PRODUCTS CO., Dept. BEC 6543 S. Laramie Ave., CHICAGO, ILL.

Makers of the FAMOUS HOOF CANTILEVER GOVERNORS.

BARGAIN

(CONTINUED FROM PAGE 25)

sumption. Our records immediately pointed out the offenders. We were using a high grade oil for which we were paying $0.67 per gal. and were having plenty of sludge trouble. We started installing oil filters with rechargeable cartridges and today have oil filters on all of our vehicles. We found by weighing the cartridges that we got less sludge from an oil made from a Mid Continent crude paraffin base, costing us $0.41 per gal., than we got from the $0.67 oil. We soon found our motors cleaning up and before we could get to re-ring some of them they were actually using less oil. Some of our trucks now run 7000 to 8000 miles between oil changes.

We are getting remarkable mileages, having just installed sleeves in an International 2-ton truck which failed only because of a broken water seal in the cylinder. This truck had 91,000 miles on it at the time and outside of being re-ringed, had nothing done to the motor. In department store work this is good mileage and inasmuch as the truck was running 800 to 1000 miles before adding a quart of oil, it probably would have given many more miles of satisfactory performance. Filters cost us $0.90 a piece, but we found by saving cartridge frames we could repack them with cotton waste inclosed in cotton tubing at a cost of $0.08 for material and $0.15 for labor.

We have installed expanding rings in motors which did not have over .010 in. wear and have gotten satisfactory performance, amounting to, in some instances, 30,000 miles before it was necessary to do a rebore job.

(TURN TO PAGE 90, PLEASE)

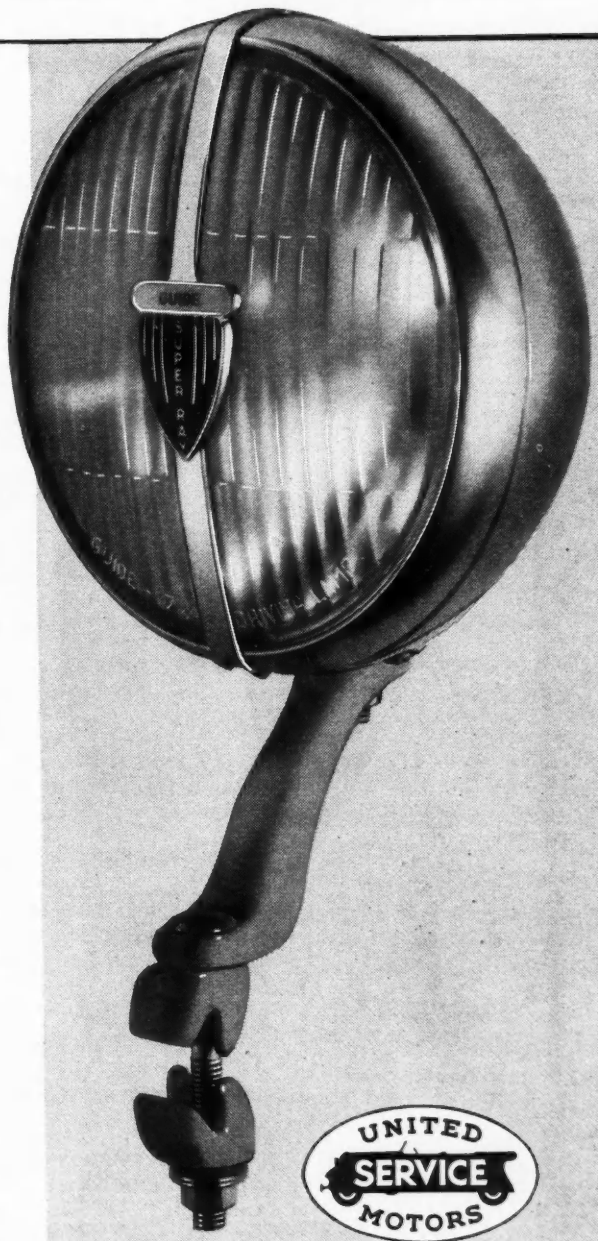
THE GUIDE SUPER-RAY *is your* ALL-WEATHER FRIEND

In all kinds of weather, fair or foul, the Guide Super-Ray driving lamp proves itself the friend of all night-run drivers. The driver behind the Super-Ray sees the road clearly for hundreds of feet ahead. In bad weather particularly, the Super-Ray is far more effective than the best of ordinary lights. And the driver who is coming toward the Super-Ray-equipped truck or bus is not blinded by a glaring light, because the Guide Super-Ray has a *completely controlled beam.*

Designed and built to meet the present-day conditions of highway traffic, the Guide Super-Ray is an ideal driving light for any car, truck or bus that must operate through the night and through inclement weather conditions. A specially designed multi-plane reflector—a standard pre-focused bulb and detachable bulb cap—a precision, optical-type lens—a mounting bracket that permits full rotation of the lamp body to avoid interference from bumper brackets, fenders or other equipment—these are the features of the Guide Super-Ray that are important to you because they mean *outstanding performance!*

See your nearest Guide Lamp Distributor or United Motors Branch for a demonstration of the Guide Super-Ray. You'll find that it is the cheapest insurance you can have against delayed schedules due to foul weather.

Another famous Guide safety light is the Guide Fog Lamp. This lamp produces an amber beam that cuts through rain, snow or fog. Popular among coach and truck operators, Guide Fog Lamps are doing their job on the highways of the nation.



UNITED SERVICE MOTORS

Replacement parts for all Guide Lamps, Marker Lights, Reflecting Signals and Directional Signals are distributed through the nationwide facilities of United Motors Service. This wide availability of Guide parts is an advantage to owners of Guide-equipped units.

Guide LAMP

Division of General Motors Corporation
Anderson, Indiana

When writing to advertisers please mention Commercial Car Journal

BARGAIN

(CONTINUED FROM PAGE 88)

Since our trucks make as many as 200 package stops a day this is good mileage, and about the same mileage given by a rebore job before the use of filters. We have had no trouble from sticking valves and grind them now only when we find the motor losing power or giving a poor vacuum or compression gage reading, traceable to such. These gages which are Weidenhoff Portable gages, costing us $7.50 each, have enabled us to detect defective fuel pumps and improper carburetion, which when used in conjunction with a float level gage have enabled us to make proper carburetor settings and hence get better gasoline mileage.

By purchasing a gallon of acetone and washing all carburetor parts in the same, we are able by installing carburetor repair kits, purchased for as little as $1.05, to do a complete carburetor overhaul job, costing us formerly from $4 to $6 when farmed out.

By use of synthetic enamels and by purchasing a DeVilbiss spray gun for $35 and a Champion Air Compressor for $165 we were able, in conjunction with six flood-lights and a drop curtain, to do the painting of our trucks in our own shop. This formerly cost us from $50 to $100 per truck when farmed out, but now with little additional help in our shop, inasmuch as we have much less motor and chassis work due to improved greasing methods and proper use of oil filters, we are able to do this work and improve the appearance of our fleet at a considerable saving. We have painted 12 trucks, averaging about one truck a month.

We asked for bids on lettering for these trucks and found that by eliminating the sign of quality shield that we would have to pay $17 for a good gold leaf job, which was for the words Penn Traffic Co. and the proper truck numerals only. By the use of decals, which we purchased in lots of 25, we were able to letter and number a trucks for $7.50, which was a saving of $9.50 each. These decals have resisted the attacks of weather better than the gold leaf hand painted jobs. As I stated before, these things were made possible largely through the cooperation of our shop help, who are very adept and are turning out jobs comparable to any put out by paint shops at the present time. We have been able to utilize surplus labor when available in cleaning up bodies preparatory to painting. Since this work does not require skilled labor, idle truck drivers can do it nicely.

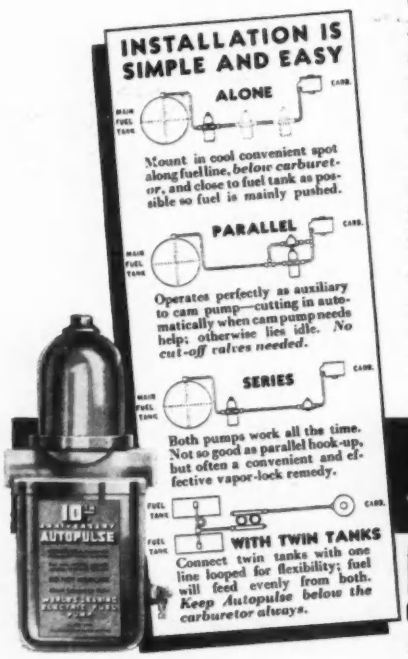
Turning to our tire problems, and we had them the same as anyone else, we found that by checking tires regularly every Monday morning we soon were saving in repair bills, per year. We installed a tire file and made a record card of every tire in our fleet. By the use of recaps we have gotten as many as 50,000 miles from recapped tires. We found, however, that it did not pay to buy second hand casings as these invariably gave us trouble.

Lost tools had always been a problem in our shop. The mechanics would leave them on fenders and running boards and they would very seldom be detected by the drivers. Since

(TURN TO PAGE 92, PLEASE)

GREAT STUFF IN CHAMPAGNE BUT A HEADACHE IN GASOLINE . . .

When a hot engine mounted pump boils the gas it means that as much as 10 to 15 percent passes out of the carburetor vent and is wasted—or that the bubbles back up down the fuel line and cause vapor lock with its expensive tie-ups.


INSTALLATION IS SIMPLE AND EASY
ALONE
Mount in cool convenient spot along fuel line, below carburetor, and close to fuel tank as possible so fuel is mainly pushed.
PARALLEL
Operates perfectly as auxiliary to cam pump—cutting in automatically when cam pump needs help; otherwise lies idle. No cut-off valves needed.
SERIES
Both pumps work all the time. Not so good as parallel hook-up, but often a convenient and effective vapor-lock remedy.
WITH TWIN TANKS
Connect twin tanks with one line looped for flexibility; fuel will feed evenly from both. Keep Autopulse below the carburetor always.
AUTOPULSE

Cost-smart operators by the thousands have learned that they can't afford either and have eliminated this trouble with the one remedy that has never failed during the past 10 years. They equip every unit with Autopulse, the pump that mounts in a COOL spot anywhere along the fuel line where it delivers COOL fuel in a solid steady stream.

The cost is surprisingly low. Your present troublesome pumps or vacuum tanks have a real value when turned in. Ask us about our . . . . .

Liberal TRADE-IN offer. Take advantage of this saving—MODERNIZE your fuel supply equipment NOW!

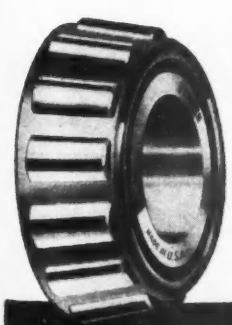
AUTOPULSE ELECTRIC FUEL PUMP

AUTOPULSE CORP. 2821 BROOKLYN AVE., DETROIT, MICH.

WHERE ELSE COULD YOU GET SUCH DEFINITE ASSURANCE OF ADEQUATE DELIVERIES OF ALL SIZES OF TAPERED ROLLER BEARINGS AT ALL TIMES ?

The Timken Roller Bearing Company has a monthly production capacity of 6,000,000 bearings in assorted sizes of such variation that instant service can be had on any size for any piece of equipment even though that equipment may have been obsoleted many years ago. Large inventories are carried at the factory, at our factory-controlled branch warehouses and by a nation-wide chain of Authorized Distributors.

TIMKEN BEARING SERVICE



TIMKEN
TAPERED ROLLER BEARINGS

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO
Service-sales Division

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(CONTINUED FROM PAGE 90)

we think that good tools are inducive of good work, we furnish all of them down to screw-drivers and pliers. We solved this expensive item and thereby created also a much neater and cleaner shop in this manner. First we made a large tool board which was fastened on the wall, running the entire length of the work bench. On this board every tool, even down to oil cans and grease guns, including all punches and drills were fastened by using finishing nails for brackets. The entire board was then painted white. The tools were next sprayed with a muck solution and placed on the board. The entire board was then sprayed black, the tools taken down, the black paint washed off and there we had an exact outline of each tool in white. Now when a job is finished or at the end of a day, one glance at the board tells our shop men what tool is missing and they immediately replace it.

ANNOUNCING
The Crest
The Aristocrat of Driving Lamps
Develops 40,000 Cp—Visible 1500 feet
Daylight Brilliance—No Glare—Penetrates Fog, Snow, Rain, or Dust—Theft Proof—Fits all Cars. Lamp, door, and reflector all brass, chrome finish. Over-all diameter 8¼".
List price, with white or amber lens . . $9.00
Do-Ray Lamp Company
1458 S. Michigan Ave., Chicago, Ill.
The New SUPER DRIVING LAMP
by DO-RAY
SAFETY LIGHTING AND REFLECTING DEVICES

SELF-SERVICE

(CONTINUED FROM PAGE 23)

3/64 inch and 1/16 inch. Therefore, we make a practice of always refinishing our cylinders to fit the next oversize pistons. This gives us the advantage of using pistons which have been found to be best for certain motors, and also the advantage of having any size piston in our entire fleet, available at any factory branch, without the necessity of waiting to have a semi-finished piston ground to fit an oversized cylinder. The same thing also applies to piston rings, these being a very good ring and always available in any of the required oversizes.

Flywheel clutch surfaces were formerly machined and ground by an outside machine shop at a cost of $10 each, which the said machine shop claimed was inevitable, due to hard spots in flywheels, making it necessary to do the whole job by grinding. We had an old lathe, which was in fairly good condition, but too small to swing flywheels. We, therefore, made up patterns to block up the head and tailstocks of the lathe, high enough to enable us to swing 28-inch diameters, and had castings made up and planed to fit the ways of the lathe. We then scraped and fitted these, so that lathe operated true. We then purchased Carboloy tool bits to enable us to do most of the work on flywheels with these, as these tools will cut through hard spots and all, when shaped correctly, and with a slow enough surface speed, and lathe feed. We also purchased a lathe tool post grinder in ½ hp. size. This we use only for finish grinding, after turning. All of this cost us $78 and resulted in our being enabled to refinish our own flywheels at a cost of $2.25 each. Since using this procedure, we have refinished 63 flywheels, resulting in a net savings to us of $410.25.

We also use this same setup on truck wheels in this way. I think nearly every fleet operator has, at some time or other, when truck wheels were off for inspection, brake lining, or other reason, found that the wheel bearing cup or cups were loose in the wheel, and that a new cup was also loose, due to the metal in the wheel stretching, or compressing, under loads, enlarging the cup recess.

(TURN TO PAGE 94, PLEASE)

A new LONGER-WEARING edition

OF THE WORLD'S MOST POPULAR TRUCK TIRE

—built on new engineering principles that reduce heat fatigue, lessen tire "growth," STEP UP TREAD WEAR —AT NO EXTRA COST

KEEPING PACE with the steady advance in truck performance, Goodyear announces a new 1939 All-Weather* truck tire—a sturdier, cooler-running, farther-traveling carrier than its famous predecessor that has long outsold any other tire.

ITS LONGER TROUBLE-FREE LIFE results from *two* basic engineering improvements that lessen service hazards—both exclusive Goodyear developments.

ONE IS "MULTIPLE COMPOUNDING" — a new method of building rubber into tires that creates a tougher bond between tread and body—*gives much greater immunity from separation.*

LOW STRETCH SUPERTWIST* CORD is the other—a more compactly twisted, lighter gauge cord that combines 15% greater strength with far less stretch. More of these stronger cords in every ply give greater resistance to bruises and blowouts with less heat-generating bulk, ply for ply, than former tires.

EQUALLY IMPORTANT, this low stretch Supertwist cord construction minimizes tire "growth"—insuring the tread against cracking and chipping.

ALL THIS ADDS UP to longer tread wear in a tire with maximum All-Weather traction *plus* greater resistance to heat, bruising and separation—*the greatest all-round service tire ever sold for the money!*

YET IT SELLS AT NO INCREASE in price—at all Goodyear dealers'. Put on the new All-Weather now—if you want a tire built for 1939 trucking needs.

THE GREATEST NAME IN RUBBER

GOODYEAR

*Trade-marks of The Goodyear Tire & Rubber Company

MORE TONS ARE HAULED ON GOODYEAR TRUCK TIRES THAN ON ANY OTHER KIND

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(CONTINUED FROM PAGE 92)
When this happens, either the wheel must be repaired, or thrown away, and a new one installed. Shimming the cup, or marking the wheel with a prick punch, as I have seen done, is no good, and won't last long enough to be worth while. The method of repairing which we have adopted, in these cases, is as follows: We clean the wheel thoroughly, bronzeweld the cup recess with Oxweld 25M bronze rod, then use our lathe to remachine the recess to the correct size for the bearing cup. This welding and machining costs us about $5.00 on the average, depending on the size of the wheel, etc. We have repaired 26 wheels in this way. Some of these wheels have since traveled upwards of 200,000 miles with no further trouble, and we have had no bearing cup loosen up again in any wheel so repaired.

I also think nearly every fleet operator has had the experience of having the "Stellite" faced exhaust valve seat inserts loosen up in motor blocks, and wondered what to do about it. So did we. Taking advantage of the fact that "Stellite" stays hard, under even intense heat, we bronzewelded the outer surfaces of these inserts, and then machined them down to .009 in. larger size than the counterbored recesses in cylinder blocks. Then, by packing them between slices of dry ice, we shrunk them small enough so that we could drive them back in the block. When these inserts return to normal temperature, they expand and tighten solidly in the blocks. We have repaired a large number of blocks in this way, the first of which has since gone well over 100,000 miles since repairing, and we have had none so repaired loosen again.

Back in 1933, the only brake drums we had turned and trued up were those badly scored. When we had these turned by outside shops the cost was $1.00 per inch, and the job, as done, was only fair, and we had to remove tires from wheels, and then wait until the wheels came back, sometimes not until the next day. Also, when drums had hard spots in them, nothing could be done about it, except throw away the drums and put on new ones. We purchased a drum lathe, of very heavy and solid construction, on which we could turn our own drums, the wheels being mounted on the lathe with cones, using the wheel cups as the point for mounting wheels on lathe arbor. This insures that the drum is machined concentric with wheel bearings. With this lathe it is not necessary to remove tires from wheels, thus saving the labor. We found that we could machine our drums for a cost of about 20c. an inch, depending on drum size. Also, by using correctly shaped "Carboloy" tools, and slow speed and feeds, we found that we could do a very good job on the drums that had the hard spots in them. So we made a practice of machining every drum enough to true and smooth it up, every time brakes were relined. This increased our lining life nearly 50 per cent, and our drum life by 100 per cent. All went well until we started relining later model trucks which used the heavy ½-inch and ¾-inch bolt on type brake blocks. Then we found that we had very poor brakes after relining due to these blocks being made to a certain drum diameter, and so stiff that a shim in back of the

(TURN TO PAGE 96, PLEASE)

Why So many operators prefer GATKE Brake Liners

GATKE *CUSTOM-BILT* Brake Liners and Blocks are available for every requirement of Truck, Tractor, Trailer and Passenger Car Fleets.

Wire mesh backing integrally moulded into GATKE *Dura-Blok* affords more secure anchorage to shoe for uniform contact with drum.

They know they can depend on *GATKE CUSTOM-BILT* Liners and Blocks for the correct holding power to give balanced brake action on each unit.

They appreciate the *uniform holding power* at all service temperatures and the unique heat-dissipating qualities.

They like the *longer-wear factor* which means fewer adjustments or replacements.

They are interested in the *reduced maintenance*.

Try GATKE Brake Liners and Blocks on your next five relines. It may lead to important improvement in your operation.

Ask your GATKE Jobber or write us for complete information.

25th Gatke Anniversary 1914–1939

BRAKE LINERS AND BLOCKS

GATKE CORPORATION 228 N. La Salle St., CHICAGO, ILL.

HERE'S THE NEW LEADER!

Packard 500

REG. U.S. PAT. OFF. TRADE MARK

HEAVY-DUTY IGNITION CABLE

Maintenance men and fleet operators throughout the country have proved to their own satisfaction that the inorganic sheath on Packard 440 ignition cable gives more miles per replacement—more economical operation—than ordinary cotton-braid-and-lacquer coverings give. Now Packard introduces the new Packard FIVE HUNDRED cable, with the assurance that it is the best that has ever been developed for heavy-duty, long-hour service.

In addition to the inorganic sheath that has made Packard 440 the favorite for fleet operations, the new Packard FIVE HUNDRED has a heavy coating of a special new flexible cable-lacquer that gives it added resistance to heat and corona. We ask you to try Packard FIVE HUNDRED on your toughest runs, and prove for yourself the economy this new cable offers you because of the following facts:

RESISTANCE TO CORONA

Packard FIVE HUNDRED is practically unaffected by corona—the lacquer coating increasing its resistance nearly a hundred times.

RESISTANCE TO HIGH TEMPERATURES

The lacquer coating on FIVE HUNDRED retards oxidation of the Neoprene sheath at high temperatures. The cable remains flexible for a longer period of time under the high-temperature operation encountered in heavy-duty fleet service.

RETAINS RESISTANCE TO MOISTURE

Like Packard 440, the new FIVE HUNDRED cable is greatly superior to ordinary cable when it comes to moisture resistance. The lacquer covering does not alter this important advantage.

EASIER TO INSTALL

The lacquer film on Packard FIVE HUNDRED permits the cable to slip easily through manifolds. A low co-efficient of friction reduces the tendency of the cable to stretch during installation.

We ask you to make a test run with Packard FIVE HUNDRED spark plug wires, and decide for yourself whether our claims are justified. We are confident that you will find Packard FIVE HUNDRED the most thoroughly satisfactory cable for fleet operations where the cables are exposed to heat and corona over long periods. Packard Electric Division, General Motors Corporation, Warren, Ohio.

Packard

REG. U.S. PAT. OFF. TRADE MARK

THE STANDARD WIRING EQUIPMENT OF THE AUTOMOTIVE INDUSTRY

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lining would not change the lining radius. Only a small percentage of lining came in contact with the drum when brakes were applied. We overcame this by the use of a brake lining grinder, which mounts on the axle wheel bearings the same as the wheel does, and is so arranged that it grinds the lining to the same radius as the drum, the brake shoes being in place on the axle when grinding. This results in no "burning in" of brakes being needed, the grinding to the correct radius, giving very nearly 100 per cent contact at the outset, doing away with the bad results of high spots in lining developing high-heat areas, glazing lining, drum checking and cracking, and excessive hard spots in drums. To date, we average very nearly 80,000 miles for ½x5-inch brake blocks, and 140,000 miles on ¾ x 6-inch brake blocks, drum renewal being practically unknown to us.

All of our tractor semi-trailer units are interchangeable, this being necessary due to our operating conditions, and is practical for us, as they are all used in long-distance work, and all are of very nearly the same size and capacity. As part of this interchangeability we have adopted 12 volts as our standard for electrical systems on these units. Our first tractors were equipped with one large 12V battery, which was very expensive to replace, when replacement became necessary. They also were not always available for purchase when we wanted them. We decided to use two 6V batteries, in series, with a heavy jumper cable connecting them together, and selected a size of 6V battery which is used in many of the larger passenger cars, and so is available practically anywhere. Also, probably due to much larger production of these batteries, quicker stock turnover, etc., we found that we could buy two of them for slightly more than one half the cost of the single 12V battery, all batteries being of the same quality. Also the two 6V batteries had a power output of about 50 per cent more than the single 12V battery. Besides this saving, we have found that such batteries last on an average a little better than 50 per cent longer than the single 12V battery did.

We have standardized our springs, so far as is possible, and carry a set of springs for each make and model of vehicle we operate, in our service stock. When a spring has a broken leaf, or sags down, we find it advisable to change both springs, either front or rear, as the case may be, and have both springs rebuilt to our standard arch for that model. We also use a compressed air wrench for removing and replacing the spring clip nuts, this saving much time and insuring that the spring clips are properly tightened when replaced, and eliminates the necessity of retightening clips the next day, after truck has been run. With this equipment we often change two of our heaviest springs in an hour, with two men, and never over one and one-half hours.

Our radiators are all repaired in our own shop. One of our men was formerly employed by a radiator manufacturing company and is also a sheet metal worker, enabling him to repair fenders, etc. In case of a radiator core needing renewal, we purchase the core, and assemble it ourselves, using our own upper and

(TURN TO PAGE 98, PLEASE)

I'm lit up like a Christmas Tree—
But they see my arrow!
With tail light, stop lights, and outline lights, the directional signal has plenty of competition right on your own vehicle. Add rain, snow, fog, mist—mix it with heavy traffic and a fast schedule, and you've got some of the reasons why you see more and more Connecticut Directional Safety Signals on the road every day.
Day or night you can see Connecticut arrows from a safe distance every time. They're non-clogging, shatter-proof, rust resisting.
Ask for Bulletin C8—it is free and tells the whole story.
CONNECTICUT TELEPHONE & ELECTRIC CORPORATION
MERIDEN, CONNECTICUT
Trailer Operators: For safer lighting, use the improved Connecticut Trailer Connector. It's heavy duty!
CONNECTICUT
DIRECTIONAL
SAFETY SIGNALS

It will *Pay* you to use TOLEDO AEROTYPE

VALVES • PISTONS • PINS

Install Toledo Aerotype valves, pistons and chrome-plated pins and you'll learn about improved motor performance and lower operating costs. Designed specifically for heavy duty truck and bus motors, they assure you of dependable, long life, trouble-free operation. Toledo Aerotype valves, pistons and pins have from three to four times the stamina of ordinary parts. That's why fleet owners have standardized on the Toledo Aerotype line. Test a set today and get for yourself the facts about Toledo Aerotype savings. See your jobber or write us direct.

THE TOLEDO LINE IS COMPLETE

Valves and Valve Parts . . . Pistons: Aluminum, Cast Iron . . . Piston Pins: Chrome-Plated . . . Cylinder Sleeves . . . Cylinder Sleeve Assemblies . . . Engine Bearings . . . Water Pumps . . . Water Pump Parts . . . Tie Rod Ends . . . Chassis Bolts and Bushings . . . Shackles: Tryon, Silent "U"

THE TOLEDO STEEL PRODUCTS COMPANY, TOLEDO, OHIO, U. S. A.

Warehouses: Atlanta • Boston • Chicago • Cincinnati • Cleveland • Dallas • Detroit • Jacksonville • Kansas City • Memphis Minneapolis • New York • Philadelphia • Pittsburgh • St. Louis • Wichita • Los Angeles • San Francisco • Portland • Seattle

TOLEDO

AEROTYPE VALVES • AEROTYPE PISTONS • CHROME-PLATED PINS

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(CONTINUED FROM PAGE 96)

lower tanks and shells. We have a radiator testing tank, and the necessary equipment for this work, most of which we made up ourselves, in slack time. This man is used to help the other mechanics when we have no radiators, fenders, or gas tanks to be repaired.

At present our fleet consists of the following and, for 1938, traveled the miles as shown below:

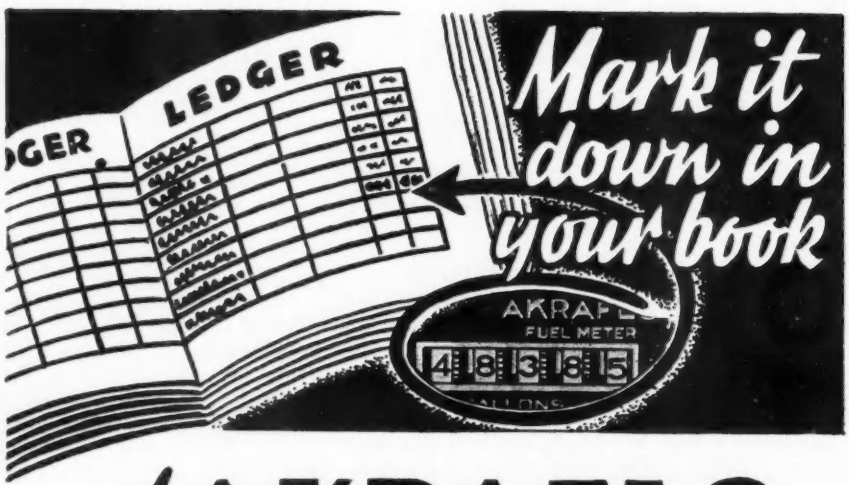
	1938 mileage
6 service cars	46,280
6 passenger cars	85,126
46 four wheel trucks	815,191
58 tractors	3,450,317
94 semi-trailers	3,421,472
Total mileage	7,818,386

All of our vehicle lubrication is done by three men, one of whom is in charge of this branch of the maintenance department. Each vehicle carries in its cab a card on which is entered the date, mileage, work done, as "greased," "oil changed," and the signature of the person performing the work. Also, each man is required to complete his daily time card, giving the same information, also material used. From these time cards records are kept and charges made to each individual unit for this work. In this way we can tell instantly either from the card in the trucks, or from the office records, just when each unit was last greased, oil changed, etc., and by whom.

We have units stationed at various of our terminals which formerly were lubricated and oil changed at these terminals. This did not prove satisfactory, as well as requiring a large amount of equipment and material to supply all terminals adequately, and which, if used at all would be used only a short time each week and lying idle the balance of the time. To overcome this, we designed and built a mobile lubrication outfit, using a 1½-ton truck on which we built a suitable body and mounted an air compressor, two air-driven high-pressure chassis grease pumps, one air-driven gear oil pump and one air-driven motor oil pump. This outfit is in use 24 hours a day, with three men, working 8-hour shifts. It is sent out to our various terminals to lubricate all of the equipment stationed at them, as required, the rest of the time being used at our main plant, here in New Haven. This has been in use for nearly four years, and has proven entirely satisfactory. These men have been trained to observe units carefully when working on them and report anything out of order, also any unit using more than a minimum amount of gear oil in transmissions or rear ends, showing leaks, etc. These we immediately order into shop for the necessary repairs.

When first we had the hypoid and spiral bevel gears in rear ends, we experienced difficulty with gear oil for them, same as everyone else, and had some failures of rear ends as a consequence. After investigation we adopted a gear oil which proved satisfactory, using this entirely, as a result of which we have had no rear end failures at all for the past two years.

We have found that using the correct lubricant for all moving parts, and administering doses of same at proper mileage intervals, is the greatest money saving device we have. It saves ruination of expensive parts, labor of renewing same, road tieups from such failures and loss of use as well as delay in deliveries.

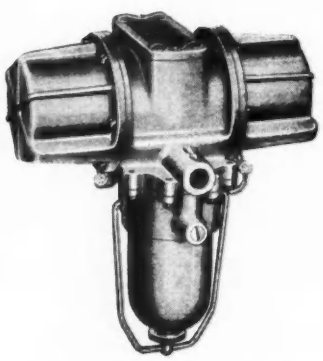


with AKRAFLO
YOU CAN CUT FUEL COSTS!

Check fuel consumption accurately . . . keep a record for each vehicle . . . and you'll cut fuel costs! But to check consumption accurately, check it AT the motor with the Akraflo Fuel Consumption Meter.

With Akraflo you can check payloads . . . know when motors need tuning . . . check efficiency of fuels or engine overhauls . . . check routes or makes of vehicles . . . check efficiency of drivers—and other factors.

At its moderate price, Akraflo will quickly pay for itself in improved efficiency alone. Start cutting your costs—get full details NOW!



Akraflo can be had with integral dial illustrated . . or with Remote Dial for steering column or dashboard mounting.

S. F. Bowser & Co., Inc.
FORT WAYNE, INDIANA, U. S. A.

BOWSER
makers of
THE WORLD'S MOST WIDELY USED METER

WHY CHEVROLET LEADS
in Motor Truck Sales

Why do Chevrolet's 1939 truck sales exceed by 36 per cent* the sales of the next truck manufacturer?

There can be but one reason for Chevrolet's predominant leadership in sales. It is that buyers, in business and in industry, purchase motor trucks as they purchase other capital equipment, on the basis of the maximum return on their investment—and have concluded that the best buy is Chevrolet.

**Latest available R. L. Polk & Company official registration figures through May, 1939.*

1st in Value
1st in Economy
1st in Sales

Lower Prices
Lower Operating Costs
Lower Upkeep

CHEVROLET MOTOR DIVISION, *General Motors Sales Corporation*, DETROIT, MICHIGAN
General Motors Instalment Plan—convenient, economical monthly payments. A General Motors Value.

DESIGNED FOR THE LOAD CHEVROLET **POWERED FOR THE PULL**

MASSIVE NEW SUPREMLINE TRUCK STYLING . . . COUPE-TYPE CABS . . . VASTLY IMPROVED VISIBILITY • FAMOUS VALVE-IN-HEAD TRUCK ENGINE • POWERFUL HYDRAULIC TRUCK BRAKES (Vacuum-Power Brake Equipment optional on Heavy Duty models at additional cost) • FULL-FLOATING REAR AXLE on Heavy Duty models only (2-Speed Axle optional on Heavy Duty models at additional cost)

When writing to advertisers please mention Commercial Car Journal

RECIPE

(CONTINUED FROM PAGE 31)

are now being transferred to new chassis at a substantial saving of approximately $200 per vehicle.

To improve our tire and battery life we have an agreement with the vendor whereby they send a service truck to our garage one night a week with two men. They inflate each tire to its proper pressure, check wheel alignment and add water to the battery. With this service we have realized an approximate increase of 20 per cent in tire and battery life.

After each department had an efficient operating system we then started a campaign to teach our drivers the proper and most efficient way to drive their vehicles. To cover this thoroughly, each man was taken on a test run, with the writer, after his vehicle had been equipped with the shop vacuum gage and a Zenith gas mileage tester. In the course of this test conditions encountered on his daily route were duplicated, that is, we would make the same number of stops per mile as he would on the route. In starting the vehicle and shifting gears we would point out the excessive amount of gas used in long and fast runs, in intermediate speeds, as compared to normal and short runs; also how the vacuum gage needle dropped as the gas consumption increased. We also pointed out safety factors such as giving way to reckless drivers, crossing intersections cautiously, maintaining a safe and reasonable speed, etc. We further explained the power and effort required to stop and start the car even at normal speeds, such as, brake horsepower, break-away torque, connecting rod bearing pressures, etc.

It seems as though the mechanical instinct of any man makes him a good listener to this type of discussion and makes him realize that governors are not put on our vehicles to spite the driver but are installed for his protection as well as operating economy.

To top off the test run we gave each man a copy of our "Instructions for Gas Car Operators." These instructions give the answer to most of the problems that come up in the course of the day's run.

Driver education plus repairing small jobs before they get big have a definite place in vehicle operating efficiency.

Brilliant You May Be But Eyes Can't See Through Steel

Nearly everything that happens inside an engine, such as abnormal metal wear, sludge, emulsions, wasted gasoline, etc., goes into the crankcase oil long before it appears anywhere else.

Getting it at the start means just so many more dollars saved.

Protect your costs against engine operating variables and manufacturing and refining experimental losses beyond your control.

Faber Oil Analyses of 12 determinations in every test tells what the crankcase oil in every individual engine contains—whether normal or not—why—and what to do about it. *The rest is up to you.*

It took 50,000 individual used crankcase oil analyses to find the right methods for testing used oil—another 100,000 with the help of hundreds of mechanics to teach us the interpretation and control for variables. And *now* the experience of 500,000 tests and interpretations is available to you.

Let us show you. Millions of dollars' worth of fleet equipment protected. Our fleet customers are the proof.

Write us for full details.

FABER LABORATORIES

THE RECOGNIZED AUTHORITIES ON ANALYSES OF USED OILS

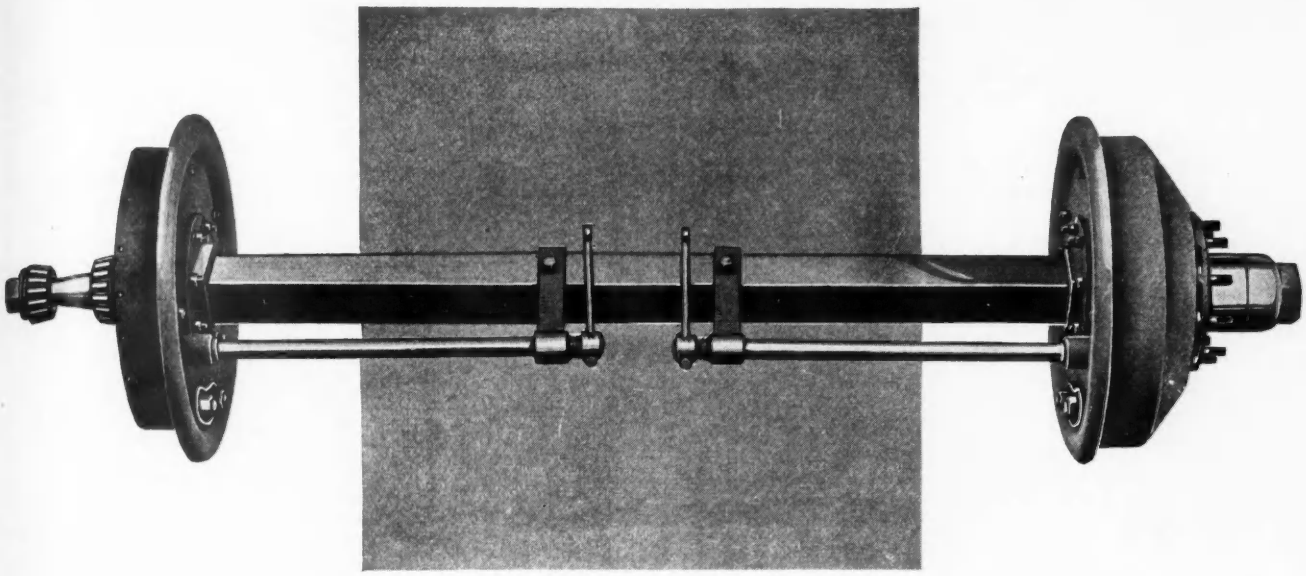
Branches serving from coast to coast—from Canada to Mexico

CHICAGO 1313 W. Randolph St.	SAN FRANCISCO 1450 Howard St.	NEW YORK 11 W. 42nd St.
ST. LOUIS 818 Olive St.	LOS ANGELES 1760 E. 15th St.	SEATTLE 7013 15th Ave., N. W.

Transfer Duo

Davidson Transfer and Storage Co. last month opened in New York a modern terminal at 155 Charles St. An island-type platform permits cross-platform loading and additional space has increased facilities about 400 per cent. The company offers direct daily service between New York, northern New Jersey, Baltimore and Washington.

Many modern movie shots are taken away from the studio and most of them need artificial lighting. So Charles Ross, Inc., rolls up this Winton-powered generator mounted on a Mack truck and supplies up to 1200 amps at 115 volts—sufficient for heaviest needs



BEFORE BUYING . . . LOOK AT ALL THREE PIECES!

ALL of us have been requested to "Look at all three" before buying an automobile. . . . Shuler thinks the same suggestion should hold, before buying axles are really of three-piece construction—NOT *one*-piece.

When we say that Shuler Tubular and Square Axles are *one*-piece axles, we mean they are made from *one piece* of fine steel bar, or tube. The spindles are swaged down from that same piece. They are NOT welded on.

We leave it to your judgment: Isn't one-piece construction always better where resistance to shock and strain is fundamental? Wouldn't you rather *have* one-piece axles—especially when they cost you no more? . . . *Write* for quotations—today!

SHULER AXLE CO., *Incorporated*, LOUISVILLE, KY.

Detroit Office: General Motors Building

Export Division:
38 Pearl St., New York, N. Y.

West Coast Warehouse:
440 Golden Gate Ave., San Francisco, Calif.

BETTER SERVICE ON "SPECIALS"

Many of Shuler's best customers were first won by our eagerness to be helpful in emergencies—such as in rapidly getting out troublesome "specials" and small orders. We invite you to test our cooperativeness, on any of our products:

- Shuler Tubular Trailer Axles
- Shuler Square Trailer Axles
- Shuler Front Axles for Trucks, Tractors, Farm Machinery, etc.
- Shuler Truck and Trailer Brakes
- Shuler Heavy-Duty Brakes and Trunnion Axles for Low-Platform, Heavy-Duty Trailers
- Custom Forgings

SHULER AXLES

When writing to advertisers please mention Commercial Car Journal

WINNERS

(CONTINUED FROM PAGE 19)

ures to show that each contestant was correct so far as his own operation was concerned, strongly support the theory that fleet operation can never be made a cut-and-dried affair. There will never be a time when a set of rules can be laid down which will work satisfactorily for any great number of fleets. Type and amount of work, type of terrain, type of vehicles, location of fleet and many other factors all enter the picture to make one man's meat another man's poison. It appears that fleet operation will always be a problem of solving each specific problem on the ground at the time the problem occurs, taking into consideration all of the factors of each particular operation.

Going from the general to the specific, one man saves money by dividing his shop force into groups and making specialists of them. This does not necessarily refer only to large shops with many men. Making certain men responsible for one division of the work to the exclusion of all else is being done even in small shops. Other shop operators have proceeded on a diametrically opposed course and can prove a profit for their efforts. Their reasoning is that they need a flexible force, that is, one where almost any man can handle reasonably well any type of work that may be assigned to him. They are able to prove their point with their records. Who is to say which method is correct? Which will work? Only a survey of conditions can provide the answer.

Where one operator finds that it is easier and more economical to maintain new trucks another finds that by junking an old truck instead of trading it in on a new truck, he can operate his old equipment very cheaply using the junk truck for a "parts boneyard." Despite the talk about calling in specialists to do certain jobs or delivering units to them for rebuilding, more fleets seem to be finding out that the only way to get a thing done satisfactorily from a fleet standpoint is to do it themselves. Others who are able to get satisfactory work, find that the cost is too high when an outsider has to make a profit out of the job.

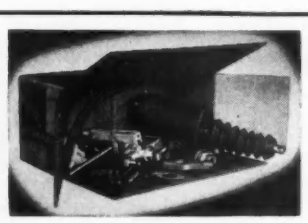
Nowhere in the countless suggestions or ideas presented in the entries is the thought advanced that fewer cost records or less complete records should be kept. It is a fair observation that most operators need more records than they have at this time.

From a mechanical standpoint even the hardy boys who hate to give up would have to capitulate from any negative stand on retreaded tires. The number of fleet operators who look upon re-capping practice as a standard economy is convincing to even the most skeptical mind.

The next most startling feature of the papers taken as a group is the extent to which crankcase oil is being analyzed as a means of determining mechanical condition and maintenance routine. This comparatively new practice is gaining in momentum. An unusual feature of this practice is the extent to which fleet operators are depending upon the

(TURN TO PAGE 104, PLEASE)

THIS Black Diamond TRAILER AND Chevrolet TRACTOR WERE EQUIPPED WITH MIDLAND POWER BRAKES AT THE BLACK DIAMOND FACTORY



MIDLAND POWER BRAKE KITS
are engineered expressly for
FORD • CHEVROLET • DODGE
G.M.C. • AND INTERNATIONAL

● Leading manufacturers back up the judgment of the largest fleet owners by adopting Midland Power Brakes as *standard factory equipment.*

Why not give *your* fleet the advantages of power brake safety and low-cost maintenance offered by Midland? Complete kits—both vacuum and air—are available for popular trucks and tractors. See your nearest Midland distributor, or write us direct for complete information.

THE MIDLAND STEEL PRODUCTS CO.
10605 MADISON AVENUE • CLEVELAND, OHIO
Export Department: 38 Pearl St., New York City

MIDLAND POWER BRAKE EQUIPMENT
MIDLAND (CHRISTENSEN) Power Brakes
SAFETY POWER

A FAMOUS OLD SLOGAN
ANSWERS PRESENT DAY PROBLEMS

SKF
Puts the Right Bearing in the Right Place

Mr. Fleet Owner—

Near you is an SKF distributor who will be only too glad to show you how to obtain long continuous performance at the lowest cost per mile. Forget your bearing problems by giving them to him.

For years the slogan, "SKF puts the right bearing in the right place," has told you where to obtain bearings that answer problems of SPEEDS varying from 10 r.p.m. to 100,000 r.p.m. —bearings that answer problems of LOADS varying from the ability to sustain a feather's weight up to tremendous crushing stresses of thousands of tons.

This slogan answers today's bearing problems in the automotive industry because it is backed by a quality product, sound engineering, and a complete bearing service. For all SAE standard annular ball bearings and many other types and sizes used in automotive applications, remember this: "SKF puts the right bearing in the right place"—ALWAYS. SKF Industries, Inc., Front St. & Erie Ave., Philadelphia, Pa.

4361

SKF
BALL AND ROLLER BEARINGS

When writing to advertisers please mention Commercial Car Journal

(CONTINUED FROM PAGE 102)
recommendation of the oil analyst for maintenance procedure and the extent to which they are following it. Perhaps this is as it should be. The whole idea is relatively new, and the extent to which fleet operators have embraced it speaks well for their progressiveness. Undoubtedly as the idea gets older and fleet operators compile more experience on it they will begin to experiment with it and from their own conclusions.

Fuel economy holds an important place in all cost reduction programs. Most important, after making sure that all engines are in good mechanical condition, is periodical tune-up by instrumentation. About half of the so-called tune-up is actually checking to make sure that parts are not failing. The other half is actual adjustment of parts such as contact points and spark plugs and other parts that start to get out of adjustment the minute the engine starts after adjustment.

Oil economy got important treatment in almost all of the papers. It actually seems that the emphasis on oil economy is out of proportion to the amount of reduction that can be effected on lubricants. Searching for a reason, it appears that the subject is always wide open for discussion because there are no standards by which to measure the effectiveness of engine lubricants which appear to please any great number, nor is there any agreement as to what oil consumption should be.

From the papers it is evident that there are still a number of well-regulated fleets that do not change oil at all. This represents in each case a well-thought-out problem and cannot possibly be construed as neglect. Another program relative to oil economy apparently embarking upon a successful career is the practice of fleets making their own cartridges for oil filters. Some fleets seem to be of the opinion that the cost of replacement filter cartridges too nearly balances the cost of an oil change to be an economy measure, and they are taking steps to reduce the cost.

Front-axle alinement shows up as an important routine in every tire-cost reduction program. This is not true from numerical mention, but from the standpoint of mention in connection with a proved tire-cost reduction. Some fleets apparently think that front-end alinement fixtures are necessary only to correct defects visible to the naked eye or those that annoy the driver. Others use this equipment as routine inspection tools, and their figures would indicate that they are right. Experience seems to show that the only difference between tire-cost reduction programs that work and those that need an alibi is the periodical use of alinement equipment.

An important economy, according to many operators who submitted papers, can be effected by painting trucks. More fleets than ever are now painting their own trucks. Some of them have taken on this job without hiring a specialist. Especially in the smaller fleets mechanics have found that with a little application and experience they can do a very acceptable job of painting, modern spray equipment being what it is. A further economy in the paint shop is the use of decalcomanias instead of hand lettering.

Among the contest entries in all

(TURN TO PAGE 106, PLEASE)

NOW, it costs 25 to 50% LESS TO KEEP 'EM ROLLING!

Thanks to ... HYPRESSURE JENNY

The Original Steam Vapor Spray Cleaner

One fleet maintenance superintendent reported that 50% of his mechanics' time was lost in fighting mud, grease, and dirt prior to inspection and repair of trucks. HYPRESSURE JENNY now saves $3400 yearly on that job; helps get trucks repaired and out on the road more quickly; and keeps 'em rolling on schedule. HYPRESSURE JENNY also quickly removes dirt that may add as much as 400 lbs. of dead weight to every load if allowed to accumulate. Strips oil base paint faster and better than any known method. Savings of 25 to 50% in time and labor costs are not unusual. You, too, can profit from the use of HYPRESSURE JENNY Steam Cleaning. Fill in and return the coupon below for a free survey of savings.

HOMESTEAD VALVE MFG. CO., P.O. Box 90, Coraopolis, Pa.

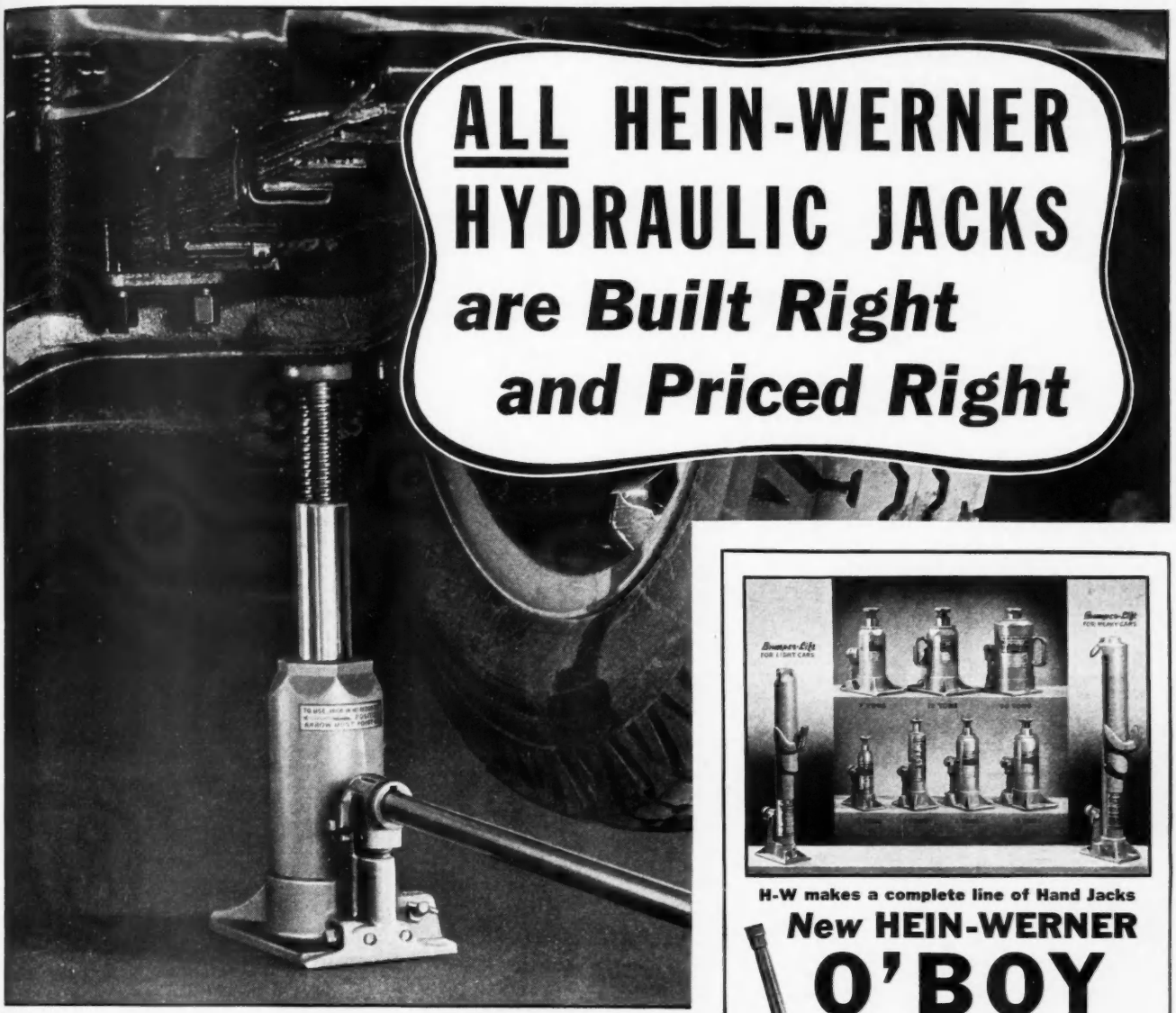
Mail THIS COUPON FOR FREE SURVEY

Go ahead—tell us how much JENNY can save us.

We employ———mechanics on dirty greasy repair work. We repair ———trucks monthly. We repaint———trucks monthly. We clean ———sq. ft. of garage floors monthly. We want to clean————

NAME .....

ADDRESS .....



ALL HEIN-WERNER HYDRAULIC JACKS *are Built Right and Priced Right*

1½ Ton Model $2.80
Only $8.95 for 5 Ton

The H-W combination of sturdy construction, safe, easy operation and LOW price warrant your placing a Hein-Werner Hydraulic Jack in every truck in your fleet.

"Bullet" Model, 1½ ton capacity is only $2.80 net . . . 2 ton Light Truck Special only $2.95 . . . 3 ton, $6.95 . . . 5 ton, $8.95 . . . 7 ton, $11.75 . . . 12 ton, $17.50 . . . and 20 ton capacity only $30.00. Also Light Bumper-Lift for passenger cars only $4.10, and Heavy Bumper-Lift, $5.45. (West Coast prices slightly higher).

HEIN-WERNER MOTOR PARTS CORP., Waukesha, Wisconsin

FEW MODELS ENGINEERED TO DO THE WORK OF MANY

HEIN-WERNER *hydraulic* **JACKS**

H-W makes a complete line of Hand Jacks

New HEIN-WERNER O'BOY
Hydraulic TIRE SERVICE JACK

ONLY

$17.45

NET TO DEALER
(West Coast $18.45)

O'BOY has 2,500 lb. capacity . . . Has quick removable two-piece handle . . . Positive release valve . . . 4" diameter wheels . . . Raises to 17½"—high enough to change the tire on any passenger car, as well as on many light trucks . . . Has sparkling WHITE SADDLE which makes it easy to spot under load. This Model "O" is a leader in "THE WHITE SADDLE LINE," which includes 1½, 2, 3 and 4 ton capacity Hydraulic Service Jacks.

When writing to advertisers please mention Commercial Car Journal

SHO-TURN Junior

RIGHT AND LEFT TURN SIGNAL

SHO-TURN JR. Right and Left Turn Signal

with Plastic Duotone Lens

New Patented features; amber arrow visible 100 ft. day or night. Entire mask including arrow is self-locking but can be rotated to desired position.

Model No. 714 Manual Switch

Call the turn *before* it is made . . . safety for driver, load and vehicle.

Six types of lamps and brackets make up any desired combination.

Complete ready for installation. Applications for approvals now pending.

Members by Invitation—Rice Leaders of the World Ass'n.

The K-D Lamp Co.

CINCINNATI, O.

THE QUINPLEX TWIN VALVE GASOLINE TANK CAP

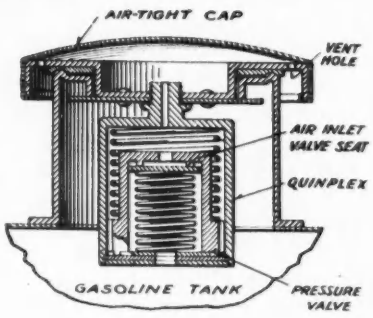
USE QUINPLEX

For Gasoline Economy.

For Better Engine Performance.

For Longer Engine Life.

QUINPLEX



P— 1. Loss and deterioration of gasoline by evaporation from tank filler opening.

R— 2. Vapor lock and engine troubles or failure due to vaporized gasoline in fuel lines or pump.

E— 3. Waste of quick starting, powerful, cream of the fuel, easily evaporated part of gasoline from fuel tank.

E— 4. Nauseating, dangerous fumes in garages and car bodies.

N— 5. Excessive crank case dilution and engine wear, resulting in quicker starting and better engine performance.

T—

S—

Incontestable Proof Covering Each Of The Above Statements Furnished on Request.

Quinplex Is Fully Protected By Patents In The United States—Canada and Principal Foreign Countries.

THE QUINPLEX CORPORATION, PITTSBURGH, PA.

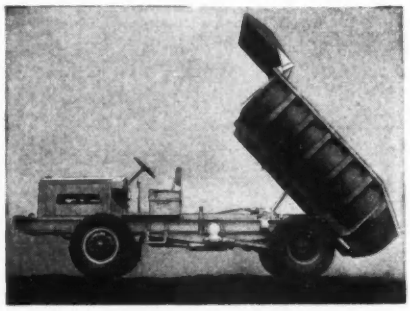
(CONTINUED FROM PAGE 104)

size classifications was a group of papers that belong in a class by themselves. These papers described a condition where a new man had taken over a fleet that previously operated the best it could without any direction or supervision. The task of bringing order and economy out of utter chaos made interesting reading, but it was awfully hard for these men to prove a case of cost reduction, because there were so many things that had to be done before records could be made accurate.

QUIZ ANSWERS

(See page 17)

1. Two—John F. and Horace E.
2. Two—Chevrolet and G.M.C.
3. Five hundred feet.
4. Four—Suction, Compression, Explosion, Exhaust.
5. Four—Suction, Compression, Burning, Exhaust.
6. Eight.
7. Six—Practically all vehicles except Ford and a few miscellaneous.
8. Two.
9. Eight—The first Model T came out in 1908.
10. Two.



There's no bluff in the way Bluff City Lime & Cement Co., Genevieve, Mo., takes hold of a hauling job. They recently added four of these quarry model 92-U Hugs. Each is equipped with a 7 cu. yd. scoop-end body with integral driver canopy and Heil hoist

It looks enclosed, but really isn't. For this 250-case bottlers body mounted on a Mack chassis has 78 in. of full-length door space on either side and the entire back opens up. It carries a mixed load and provides accessibility to every thirst taste

Rail & Highway Transportation

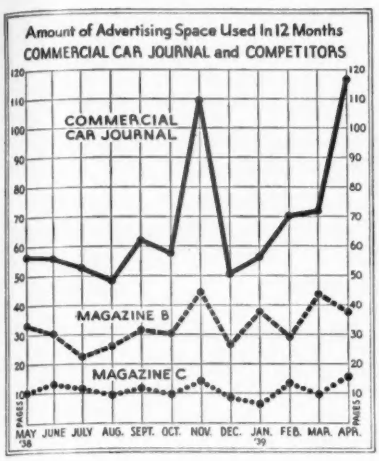
If you are one to whom statistics of the transportation industry, both rail and highway, are interesting, we recommend you send a nickel to the Transportation Division, Department of Commerce, Washington, D. C., for a revised copy of the booklet "Rail and Highway Transportation."

In 18 pages it traces the history of both forms of transport and gives up-to-date figures on traffic, revenue, financing, employment, etc. Under the heading of "History of Railroads" we note: "Some states made land grants but this form of aid was used most extensively by the Federal Government . . . the last grant being made to the Chicago & Northwestern R. R. in 1872. . . . The total area granted for railroad construction was over 150,000,000 acres."

U. S. Court Rules Out Subterfuge

The U. S. Supreme Court upheld a decision of the Missouri Public Service Commission to revoke a trucker's permit to engage in interstate operations as a penalty for hauling intrastate without having obtained the required certificate. Although the intrastate traffic involved actually crossing a state line for a short distance, the practice was described by the commission as subterfuge.

COMMERCIAL CAR JOURNAL



Leads in Advertising Volume

The chart, of course, tells the story of COMMERCIAL CAR JOURNAL leadership. Any publication, head and shoulders above the others in its field, has the confidence of the manufacturers in its industry—and is getting results for them.

We started making these charts in 1935. They all look about alike—with COMMERCIAL CAR JOURNAL always out in front. It is the No. 1 Truck Fleet publication, with 30,000 circulation monthly.

COMMERCIAL CAR JOURNAL

A Chilton Publication

CHESTNUT & 56TH STREETS
PHILADELPHIA, PA.

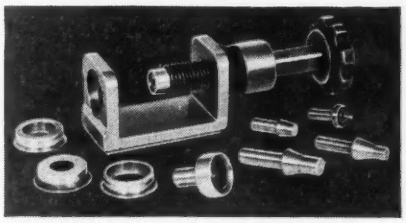
NEW PRODUCTS

(CONTINUED FROM PAGE 62)

Delco Rebushing Tool

A new tool, enabling the service man to rebush Delco shock absorber arms and links without removing the absorber or the link from the car, has been developed by United Motors Service.

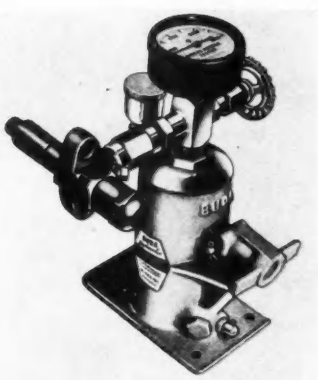
The new tool untilizes the screw principle



to press out the link pin and old bushings. The new metal and rubber bushings are then pressed into place by applying the pressure of the screw. For details, address United Motors Service, 3044 W. Grand Blvd., Detroit, Mich.

Diesel Nozzle Tester

The Buda Co., Harvey, Ill., has announced a new hydraulic diesel nozzle tester. The unit is essentially a fuel pump operated by hand, which includes adapters for fitting nozzles, an accurate pressure

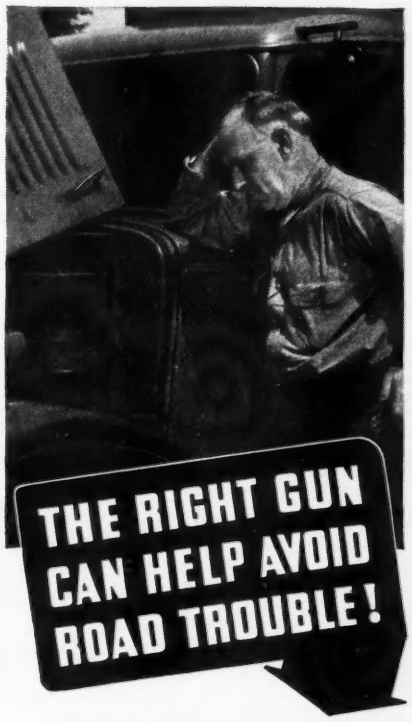


gage and the necessary valves. It is 10¾ in. high and is mounted on a pedestal drilled for bench mounting. It is designed especially for use with Bosch, Timken and Deco nozzles. It is listed at $25, including a wooden case.

Van Dorn Redesigns Drills

Seven units in the Van Dorn line of electric drills have been redesigned for less weight, more compactness and greater durability. Particular attention is called to the new ½-in. utility drill which is a full 3⅛ in. shorter and 3 lb. lighter than the previous model. The spindle and bearing features which won acclaim in the "Holgun" are also incorporated in this new drill, including a threaded chuck mount-

(TURN TO PAGE 126, PLEASE)



ALEMITE

No Air Pockets!

CONTRACTORS, truck and bus companies, retailers and wholesalers with fleets—all *find exceptional economy and dependability* in the Alemite "Rock Crusher" Power Gun. It's economical because it's fast, handling an amazing amount of work in a short time. It's dependable because it's completely free from air-pocket trouble—the exclusive, patented helix arm and worm design takes care of that!

Holds 40 lbs. lubricant. Pumps heavy fibrous grease; develops up to 5000 pounds pressure. Built for heavy duty; *easily portable;* complete with hose assembly and air coupling. Also available for electric power (Model 6524).

Write for details!

ALEMITE
REG U S PAT OFF
A Division of Stewart-Warner Corporation
1876 Diversey Parkway, Chicago, Ill.
Stewart-Warner-Alemite Corporation of Canada, Ltd., Belleville, Ontario
WORLD'S LARGEST MANUFACTURER OF LUBRICATION PRODUCTS

Sterling MOTOR TRUCKS

DIESEL AND GASOLINE

GREATER PROFITS

Cost sheets tell the story! Net savings of over $15,000.00 per truck. An achievement of Sterling Diesel powered motor trucks—trucks which have traveled in excess of one-half million miles and are still in operation.

Be sure of maximum returns on investment. Select Sterling motor trucks for superior performance and lower operating costs. Write for full information.

STERLING MOTORS CORPORATION
MILWAUKEE WISCONSIN

GENERAL FILTER

- A Proven Product
- 14 Outstanding Features
- Keeps the Oil Like New at a Very Low Cost Per Mile
- Economical, Sealed Armored Cartridge

GENERAL FILTERS, INC.
DETROIT

Be Sure to Specify

AMERICAN BOSCH
Fuel Injection Equipment
For Diesel Engines
AMERICAN BOSCH CORPORATION
Springfield, Mass. New York. Chicago. Detroit.

OVER 70% OF ALL MAKES OF TRUCKS AND BUSES ARE *Zollner* EQUIPPED

ZOLLNER
HEAVY DUTY PISTONS
ZOLLNER MACHINE WORKS FORT WAYNE IND

NEW PRODUCTS

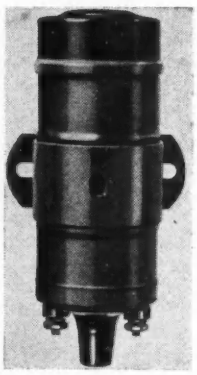
(CONTINUED FROM PAGE 125)

ing, splined mounting of spindle gear, and grease-sealed ball armature bearing.

Other redesigned units are the ⅜-in. heavy-duty, ⅜-in. utility, 5/16-in. heavy-duty and ¼-in. heavy-duty electric drills. In addition there are two newly designed drill stands—the No. 20 and No. 40.

Dual Ratio Ignition Coil

Improved starting and better performance are claimed for the new Ivano Dual Ratio Coil which features a double primary circuit. During the starting period both circuits are in operation providing an unusually hot spark at the time when least current is available. As soon as the engine starts, an automatic relay cuts out one of the primary windings. The resultant spark is just right for good performance consistant with long life of points, plugs and condensers. The built-in relay switch is equipped with silver contact points and requires no attention. Full details of the new coil may be obtained by writing Ivano, Inc., 123 E. 21st St., Chicago.

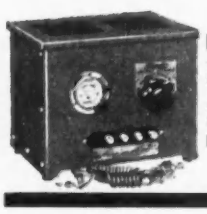


Allen Electric Shop

An electrical test bench incorporating virtually all the equipment necessary for the complete service of generators, starting motors, and all other electrical devices has been placed on the market by Allen Electric & Equipment Co., Kalamazoo, Mich. The unit identified as Model E-500, includes test stand, puller press, growler, mica undercutter, pole shoe spreader, regulator bracket, condensor tester, coil tester, etc. The various pieces may be purchased separately if desired.

Allen is also featuring a new coil tester, Model E-144. A vibrator coil permits accurate comparison tests between various

Handy
BATTERY CHARGERS



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AKRON, OHIO
In Canada—The General Tire & Rubber Co. of Canada, Limited, Toronto, Ontario

GENERAL TRUCK TIRES

Will Handle 13 to 15 Tons! — Thornton Four-Rear-Wheel Drive, engineered into standard 1½- to 3-ton chassis—extra capacity, greater traction, double pulling power! Does work of trucks twice as large at almost half cost. Write today. Thornton Tandem Co., 8701 Grinnell Ave., Detroit

THORNTON-eered for TRACTION

Money-Wise Fleet Operators Use
BEAURLINE FOUNTAIN BRUSHES
(Patented)

Beaurline, the original fountain type car washing brush, is designed to save time, effort and space in busy fleet shops. That's why money-wise fleet operators everywhere are turning to Beaurline for the solution to their washing problems.

Write for complete information on several new models, shapes and sizes, and for new low prices.

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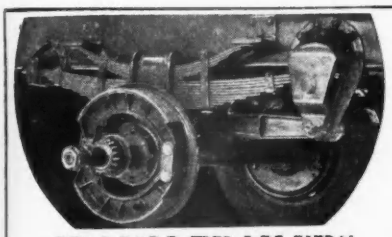

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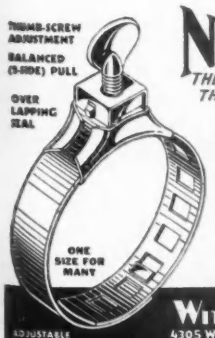
THE HOSE CLAMP WITH THE THUMB SCREW



Seals absolutely against leakage of antifreeze, radiator connections, or heater hose. Type A, Adjustable, the Clamp with the thumb screw. 1 size fits many. Type GHH for heater hose. Type GBB for Booster Brakes.

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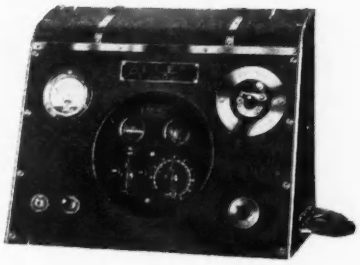
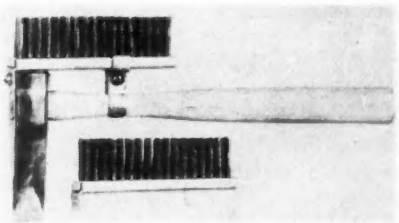


type coils. For full details concerning either of these items, contact the manufacturer at the address given.

Hammer-Brush for Weldors

A new convenience tool for welding departments is offered by St. Pierre Chain Corp. 54 Frank St., Worcester, Mass.

Called the Triplex Weldors' Chipper, it consists of a drop forged steel chipping hammer with hardwood handle, having a heavy duty wire brush rigidly mounted on the top side. The hammer chisel chips and



breaks the scale and the brush is used to clean the surface.

Bolts can be loosened to reverse the brush or to remove it and insert a new brush.

Equally useful for removing rust and scale to provide a clean bright surface for welding. The list price is $1.50 complete. Write for details.

Streamline Sprayit Gun

A new low-priced, light-weight, streamlined spray gun (Model STR) is offered

by the Electric Sprayit Co., 220 N. Broadway, Milwaukee, Wis. The entire body, cover and container are made of aluminum. It can be furnished either as a pressure feed gun with round, fan and angle spray internal mix nozzles, or as a syphon feed

(Turn to Next Page, Please)

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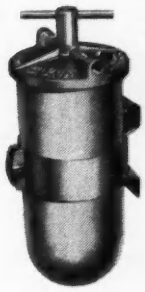

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The world's largest operators of commercial vehicles use Jones Portable Tachometers to **check engine speeds** for tune-ups, and setting governors, etc. Here are a few: Standard Oil Co., of La., N. J., N. Y.; Shell Petroleum Co., Atlantic Refining Company, Tidewater Oil Company, Keeshin Motor Express, Mack Trucks, Brockway, U. S. Navy.

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Black Diamond All-Rubber
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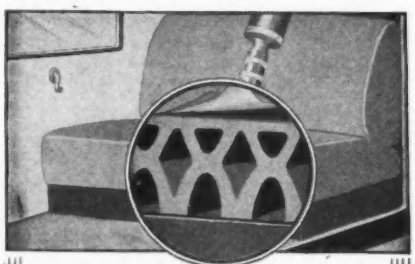
Built for ALL Conditions



Hard-boiled tests by fleet owners everywhere have definitely established proof that Black Diamond all-rubber semi-sponge seat cushions and back rests don't give out under the toughest kind of gruelling service. It's the scientifically designed exclusive diamond grid construction that makes these cushions outwear, out-last and give greater riding comfort than other types. They're modest in cost and are designed to fit ANY type of truck. Let us give you more information!

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Landing Gears
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Manufacturers of Engineered Trailer Products

NEW PRODUCTS

(CONTINUED FROM PAGE 127)

gun with external break-up nozzle. Both styles convert instantly to bleeder or non-bleeder type making them equally suitable for use on both portable compressor and air lines. There is a built-in oil and moisture filter in the handle. List price complete with 3 nozzles is $6.50. Full details from the manufacturer.

Kathanode Battery Tester

A new battery tester, designed to make a rapid analysis of battery and electrical system at the same time, has been announced by the Kathanode Corp. Batrecheck, as the new instrument is called, weighs but 10 lb. and needs only to be attached to the battery terminal posts. Battery can be left in the car or truck. Full details may be secured from Kathanode Corp., 369 Lexington Ave., New York, or 400 W. Madison Ave., Chicago.

New Plant for Handy Governor

All departments of the Handy Governor Division of the King-Seeley Corp. have been moved from Detroit to the main headquarters of the corporation in Ann Arbor, Mich., where a large additional plant was recently completed for the governor division's use.

Arthur A. Bull, president of Handy prior to the merger, becomes vice-president of the corporation and continues in charge of the governor division.

FWD Employes Cooperate

Employes of the Four Wheel Drive Auto Co., Clintonville, Wis., have entered into a new labor contract with the management which will enable the company to compete more favorably for government business, which is ordinarily awarded to the low bidder. The company will also be in a better position to serve its old customers.

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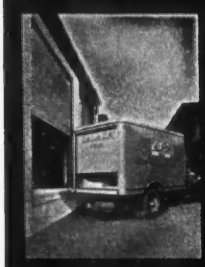

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ECONOMICALLY
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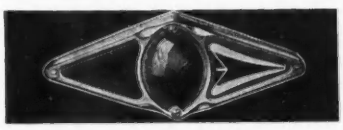

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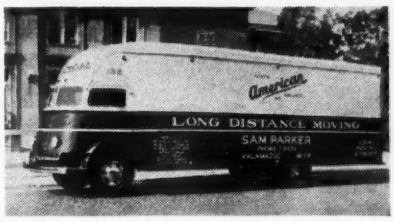
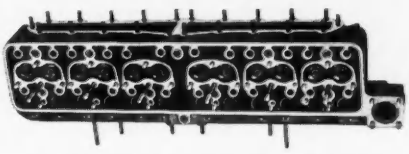


"Everything in one trip" is the motto of Sam Parker, Kalamazoo, Mich. And he seldom fails for his 35-ft. Diamond T provides a 1200-ft. load space behind driver's seat



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Port Huron — dag — Michigan
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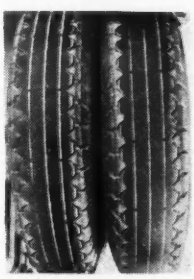
Here's what differential dual wheels on a Fruehauf trailer did for Acme Freight lines of Jacksonville. Believe it or not these tires have travelled 93,725 miles after their first recap



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● Traction on all four or all six wheels enables these trucks to go places and do things no "ordinary" truck would attempt. Prices much less than you would expect. Ask for literature.
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1938 Highway Tax Bill

An average of 4.96 cents per gal. of gasoline was collected by 380,000 "toll gates" along the United States highways in 1938, according to figures of the Automobile Manufacturers Association. The aggregate yield for Federal, state, county and municipal taxes totaled $977,734,000 and amounted to an average of $33.20 per vehicle.

This means that approximately $28.77 was put up by the average passenger car owner, while each commercial unit, including the one million farm trucks, antied $59.52. License fees, Federal excise taxes and "other" items brought the total highway tax bill to $1,530,000,000.

A ST. PAUL HYDRAULIC HOIST AND BODY FOR EVERY MODEL OF TRUCK

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KEEPING ACCURATE RECORD for the past six years, this Collins Baking fleet has experienced—

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For 6 years it has been lubricated with Havoline Motor Oil.

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Due to the improved performance of this Collins Baking fleet at Columbus, Georgia, their fleets in 4 other cities are also using various Texaco Lubricants.

Experienced engineers, trained in selecting and applying Texaco Automotive Lubricants, will be glad to demonstrate that savings can be made in *your* fleet operations. To get this engineering service and for prompt deliveries, phone the nearest of our 2229 warehouses or write:

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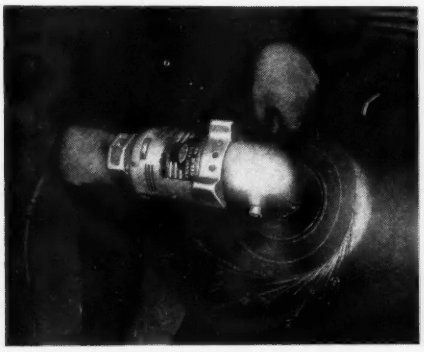
For Straight Sanding on door panels, etc., use 9⅛ inch sanding disc on 9-inch Phenol Pad or 7-inch sanding disc on 7-inch Phenol Pad.



For Flexible Sanding on fenders, etc., use 9⅛ inch sanding disc on 7-inch Phenol Pad.

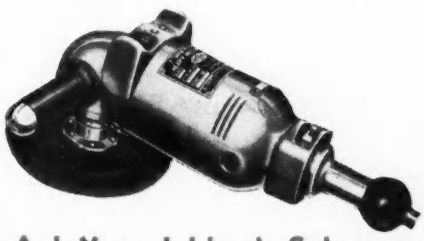
For Extreme Flexibility in sanding paint from reverse curves, use abrasive discs alone on 5-inch holder without pad.

with SIOUX PHENOL DISC PADS

Universal Disc Holder—7" High Speed Heavy Duty Sander

The SIOUX method is the easiest, handiest and most economical for all sanding and leveling work. SIOUX Phenol Disc Pads provide any degree of flexibility. One SIOUX Universal Disc holder is used for 3 sizes—9-inch, 7-inch and 5-inch abrasive discs. When abrasives are worn on the outside surface, the disc can be trimmed down to next smaller size, giving three times as much service.

No. 1267 Sioux 7" Heavy Duty Sander —4250 R.P.M. no load speed, ball bearing, heat treated alloy steel gears, permanently lubricated, universal A.C.-D.C. motor. Complete with Disc Holder, Universal Phenol Disc for 7-inch and 5-inch abrasives, 3 abrasive disc, 25-feet of 3-conductor cord (third wire for grounding).



Ask Your Jobber's Salesman

STANDARD THE WORLD OVER

ALBERTSON & CO. INC., SIOUX CITY, IOWA, U.S.A.

When writing to advertisers please mention Commercial Car Journal

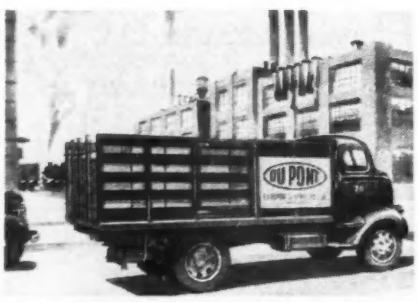
GMC Announces
NEW 10-12-15 TON DUMP MODELS
Built to withstand the stress and strain of crushing dump loads in pit and quarry service, GMC offers three all-new models (one illustrated below)—tougher, more powerful than others! Prices low.
HERE'S POWER
that only GMC can give!

General Motors Trucks pull out of deep pits and up steep grades easier than other trucks regardless of cost or make! They have *more power* with which to get rolling. In short, GMC SUPER-DUTY valve-in-head engines outpull *all other* truck engines. GMCs drive easier in *every* way, with FRICTION-FREE ball-bearing steering on medium and heavy-duty models and the exclusive SYNCRO-MESH transmission! Finally, GMCs save more on gas—as much as 40% more, owners report!

CHECK GMC DIESELS *for lower operating and maintenance costs. GMC is the only Diesel truck with effective engine braking on long downgrades—has greater lugging power for engine size—and is the only Diesel that measures, injects and atomizes the fuel directly at each cylinder.*

CHECK GMC PRICES Against the 3 Lowest!

Our own YMAC Time Payment Plan assures you of lowest available rates

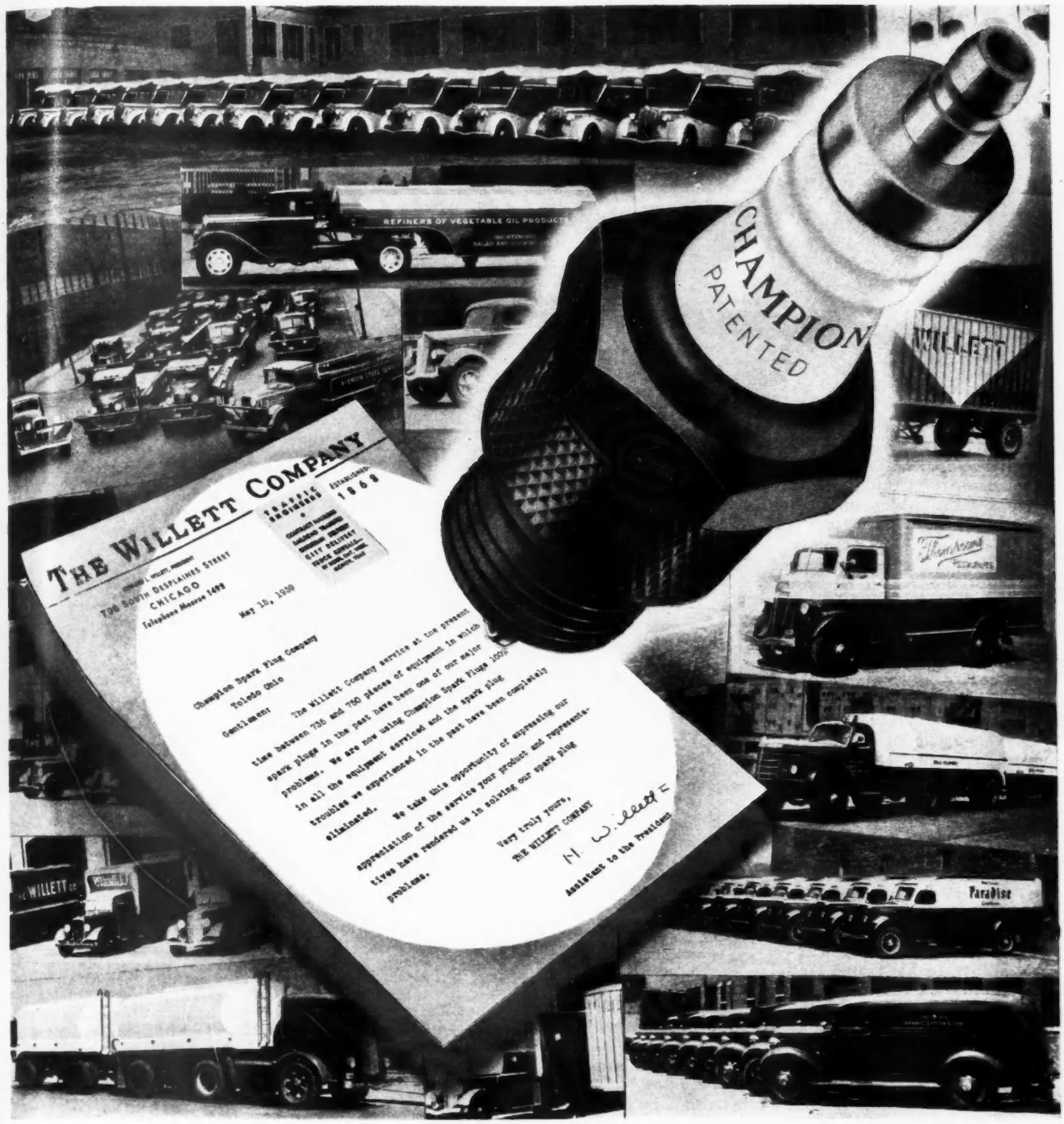


DU PONT—another famous name found on famous GMCs!

ALLIED VANS go "everywhere"—in more powerful GMCs!

CITIES SERVICE, like other large oil producers, use GMCs!

GMC TRUCKS TRAILERS -DIESELS


CHAMPION
PATENTED
THE WILLETT COMPANY
730 SOUTH DESPLAINES STREET
CHICAGO
Telephone Monroe 1499
May 15, 1939
Champion Spark Plug Company
Toledo Ohio
Gentlemen:
The Willett Company service at the present time between 725 and 750 pieces of equipment in which spark plugs in the past have been one of our major problems. We are now using Champion Spark Plugs 1059 in all the equipment serviced and the spark plug troubles we experienced in the past have been completely eliminated.
We take this opportunity of expressing our appreciation of the service your product and representatives have rendered us in solving our spark plug problems.
Very truly yours,
THE WILLETT COMPANY
Assistant to the President
WILLETT
Paradise

HAULING BAR STEEL—OR CANDY BARS . . .

750 Willett Trucks Cut Costs With Champion Spark Plugs

Serving a score or more of customers, swiftly, surely and *profitably* allows no time for less than perfect truck performance. Even an hour's delay a month on this $1,000,000 fleet means serious loss to operator and customer alike.

That's why The Willett Company, one of Chicago's oldest and largest contract haulers, has standardized on Champion Spark Plugs—the final step of efficiency in one of America's most efficiently operated truck and bus fleets.

From the little half-ton flyers, making store-door deliveries of chocolates and other costly foods, to great semi-trailer and platform units carrying a half-dozen tons of fabricated steel, Willett calls on Champion Plugs for peak engine performance, 24 hours a day. And service records from the 12 Willett garages show Champions deliver without a hitch in any going!

Stepping up performance, and cutting haulage costs, is the specialty of Champion Plugs. Put *your* job up to Champion Plugs. They cure truck ills by preventing ignition and performance lags. . . . And you'll hold on to customers, when you don't hold up their deliveries!

IT'S THRIFTY TO INSTALL NEW SPARK PLUGS—*Demand* CHAMPIONS

When writing to advertisers please mention Commercial Car Journal

THERE'S 100 YEARS OF TRANSPORTATION EXPERIENCE BEHIND THE A. TOWLE COMPANY'S PREFERENCE FOR *WHITE SUPER POWER!*

The A. Towle Company uses only the best in motor equipment. It attributes much of its success to its policy of keeping abreast of every important engineering advance. Pictured is one of its fleet of White Super Powered Model 750 tractor units, setting new performance records on the hard runs between Boston, New York and Philadelphia.

From the beginning they always found it profitable to use "the best equipment of its day." Years ago, fine horses, well cared for, and sturdy rigs of this type helped make the company one of New England's largest.

IMAGINE a highway transportation company 100 years old! How can you square the existence of one with the public's notion of our industry as a modern upstart?

The answer is, you can't. Roads have been arteries of commerce since time began. And you can find no more convincing proof of the necessity for them remaining so than the 100-year record of the A. Towle Company of Boston.

The fact that it has been in business so long, and has grown so large, is proof in itself that it renders an essential transportation service to thousands of New England shippers and, through them, to millions of eastern consumers.

Allan J. Wilson, owner of the company and one of the trucking industry's most prominent figures, likes to think of his firm as one which has grown large by virture of a loyal organization's ability to keep ahead of the demands of the shipping public. "The chief credit we take is that we have always provided *good tools* for the organization to work with," Mr. Wilson said. "Good horses and wagons in the years gone by, and the best of motor equipment as important new engineering developments have come along."

Mr. Wilson marked the start of his company's 100th Anniversary Year by placing in service, January 1st, a fleet of White Super Powered Model 750 tractor units. Because their performance on demonstration trips—actual service runs—have been so impressive, the Super Powered Whites were placed on the company's hardest runs, overnight from Boston to New York and Philadelphia.

The same power units work through the day in pick-up and delivery service at these two points and return fully loaded, so their operation is practically a continuous one —24 hours a day. The daily mileage averages over 300 per unit, mostly over the highway, but including a good many hours in highly congested metropolitan traffic.

The A. Towle Company operates more than 75 White trucks—all purchased since 1927 and 31 of them in the past two years.

Here's how the A. Towle Company sums up the advantages of their White Super Powered units, hauling 40,000-lb. gross loads:

1. ***The 1,000-lb. chassis weight saving we use for extra payload.***
2. ***We average 1 mile MORE per gallon of gasoline.***
3. ***Our shippers can depend on 7 a. m. deliveries in New York City, overnight from Boston, because of the saving of an average of 1 hour in TRIP TIME.***

These leaves from the book of experience of a transportation company 100 years old should prompt YOU to arrange for your White Super Power demonstration *now*. Your local White Branch or Dealer will gladly supply a tractor to hook onto your own loaded semi. Put your own driver behind the wheel—on your hardest run—and we'll let the performance do all the rest of the talking. Phone your Branch or Dealer today. THE WHITE MOTOR CO., Cleveland.

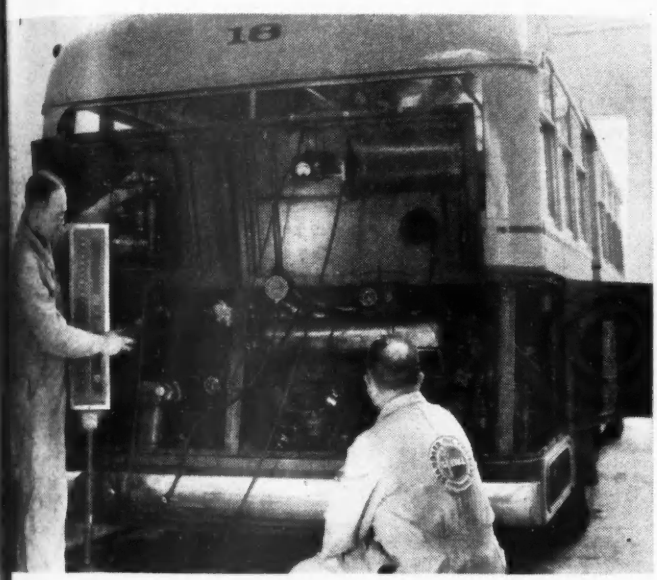
White Super Power Trucks

GAS FUMES ELIMINATED FOR CITY COACH CO.

Complaints of gas fumes in the buses of a certain Midwestern city coach company brought a sharp ultimatum from the city health authorities. "Clean up the air in the buses or take them off the street!"

It was no time for this operator to experiment. He called in a Standard Automotive Engineer. From past experience with smoke and odor difficulties, and with his equipment for accurately checking engine performance, the engineer readily located the cause of the trouble.

Today, this coach company has the best record in its state for clean air and smokeless operation.



Fume and odor troubles are caused primarily by poor engine performance, poor manifold temperatures, poor carburetion, etc. This illustration shows some of the equipment a Standard Automotive Engineer uses to locate the real cause of smoke trouble.

STOPS BEARING FAILURES IN COUNTY HIGHWAY EQUIPMENT

Equipment in a county highway fleet was spending almost as much time in the shop as it was on the job. Bearing failures in the gear cases on trucks and tractors were keeping the maintenance gang busy. Then a Standard Automotive Engineer was given a chance to examine the bearings and the used lubricant.

He found the bearings corroded and etched. The lubricant had oxidized and formed a coating on the gear cases. Naturally the bearings were not getting proper lubrication.

The Engineer recommended the right grade of a more stable lubricant for each type of equipment. Bearing failures from this source have been entirely eliminated.

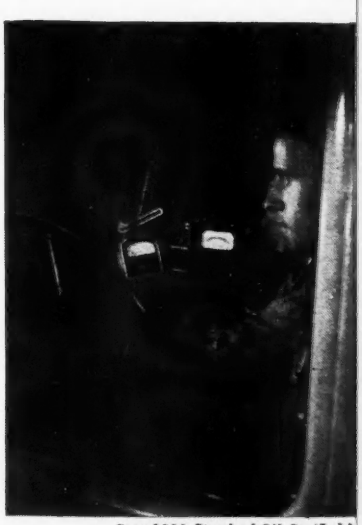
K. E. Mebold, Automotive Engineer, Kansas City, explaining the purpose of various instruments he uses to W. S. Burks, Fleet Manager of the Gillette Transportation Company.

TRUCKER HAULS 15-TON LOADS AND STILL GETS 6 TO 7 MILES PER GAL.

Engines picked up as much as 2 miles per gallon after a Standard Automotive Engineer finished checking a Kansas Transport fleet. On one of the large tractor-trailer units this meant a saving of 3 barrels of gasoline a week under normal operation. And that saving wasn't made by sacrificing power. This unit still handles loads up to 15 tons with ease.

That's where Standard Automotive Engineering Service differs. These Engineers have scientific instruments to locate the real cause of engine inefficiencies. Their instruments are portable. They can be used in your trucks *on the road* where the engine can be checked for both power and gasoline consumption under actual operating conditions.

Let one of these Engineers show you just what he does on one of your own trucks. You can reach him through your local Standard Oil (Indiana) office or by writing 910 South Michigan Avenue, Chicago, Illinois. It will cost you nothing but the phone call or post card.



Riding the trucks even on night runs is all a part of the Standard Automotive Engineer's job. Illustrated here are a few of the instruments that tell him what's going on inside the engine under actual operating conditions.

FIRST IN SERVICE
50
FOR FIFTY YEARS
STANDARD OIL (IND.)

Copr. 1939, Standard Oil Co. (Ind.)

STANDARD OIL COMPANY (INDIANA)

AUTOMOTIVE ENGINEERING SERVICE

LOWERS MILEAGE COSTS

EVEN GASOLINE TRUCKS ARE DIESELIZED NOW!

This is one of five trucks operated by the Mogul Transportation Company, Portland, Oregon. Each is repowered with a Model 6-71 GM Diesel, has a gross weight loaded of 49,000 to 54,000 lbs. They haul gasoline between Portland, Oregon and Boise, Idaho; average 8.08 miles per gallon of low-cost fuel oil over the steep grades of the Columbia River Highway.

THE Mogul Transportation Company had more reasons than most fleet owners for not Dieselizing their trucks. Their job is hauling gasoline.

But their route is a tough one—from Portland, Oregon to Boise, Idaho—including one of the longest, most grueling upgrades in the Pacific Northwest.

And they'd heard that the GM Diesel was out-lugging all types of engines on the hills—gasoline engines as well as other Diesels.

It wasn't a case of economy alone. They wanted better performance, too.

The rest is history. The records for their fleet of five trucks show 8.08 miles per gallon of fuel oil; 258.31 miles per quart of lube oil; .03¢ per mile for maintenance—after 40,000 miles of service for each unit.

But that's not all. Their GM Diesels take famed "Cabbage Hill" in one to two higher gears than their previous gasoline engines—have importantly reduced the running time on this 11-mile stretch of 5% to 14% grades and other hills en route—now make the 960-mile round trip on a 35-hour schedule.

Here is a typical example of the outstanding job General Motors did for truckers—when they power-packed the Diesel into units of gasoline compactness—when they developed a Unit Injector and Fuel Pump that provides faster-than-gasoline acceleration, permits full engine-braking on downgrades and functions dependably on almost any of the commercially available fuel oils.

• • •

Why not learn how the GM Power-Packed Diesel can step up your schedules and step down your costs? Just write for the name and address of your nearest GM dealer . . . now.

GM GENERAL MOTORS DIESEL POWER

Diesel Engine Division
General Motors Sales Corporation, Cleveland, Ohio

☆ GENERAL MOTORS DIESEL ☆

SEE THE GENERAL MOTORS DIESEL EXHIBITS AT THE NEW YORK AND SAN FRANCISCO FAIRS

Basically Different Lubricating Oil Removes Carbon; *has* Stronger Natural Film

LION **Naturalube** MOTOR OIL AND DIESEL ENGINE OIL

RESTORE POWER AND SAVE FUEL BY REMOVING HARD CARBON—STRONGER NATURAL OIL FILMS SAVE WEAR

Give this new type motor oil a thorough test and see if it doesn't lower your cost per ton mile. . . . You will find that Naturalube conserves power and saves fuel by gradually removing hard carbon deposits from rings, pistons, valves and spark plugs—that Naturalube's stronger protective oil film reduces "drag" and lessens wear.

Performance tests by motorists and fleet owners prove that Naturalube restores power—saves fuel—saves wear. In comparative laboratory wear tests 33 1-3% to 116% more wear occurred when using other type oils than when using Naturalube.

For visible and understandable proof of Naturalube's money-saving features and details of money-back guarantee, phone or write the nearest Naturalube distributor or write Lion Oil Refining Company, El Dorado, Arkansas.

LION OIL REFINING COMPANY El Dorado, Arkansas

It pays to use the LONGEST WEARING PARTS you can buy!

The Altinized Piston Ring

Only this McQuay-Norris Ring has Altinizing—the use of a tin-base bearing alloy. It is probably the most important modern improvement in piston rings. Gives you many more service-free miles!

The Rich Super Valve of Silcrome-X Steels

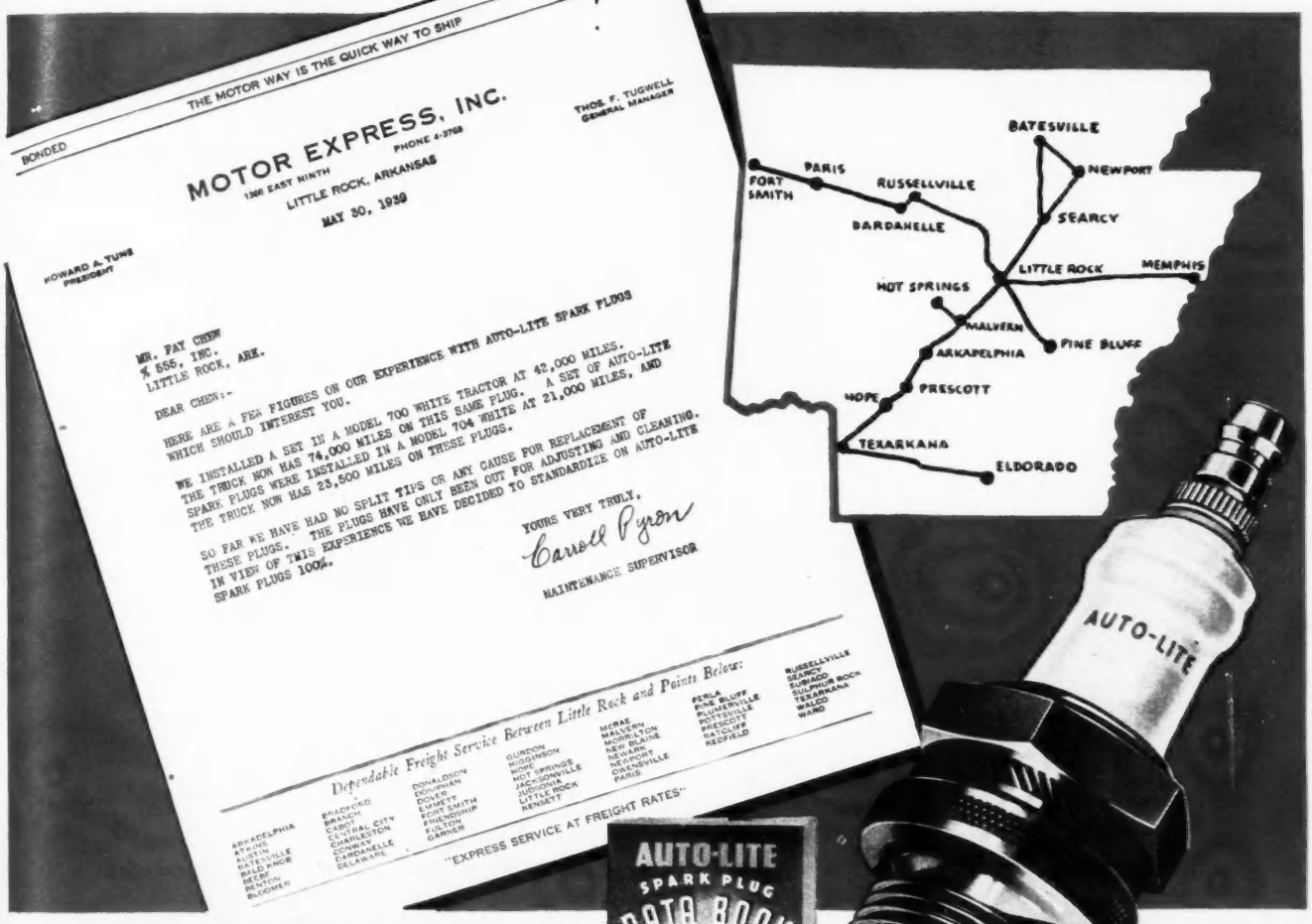
A valve designed to give you Super Life. The seat is made of Stellite—hardest, toughest material ever used in valves. It's a "service-free" valve that pays for its higher cost in many thousands of miles of longer wear.

These two replacement parts are sold exclusively by

the McQuay-Norris Jobbers

IN ALL PRINCIPAL CITIES. AMPLE STOCKS AND IMMEDIATE SERVICE ON THE PRODUCTS OF McQUAY-NORRIS MANUFACTURING COMPANY, ST. LOUIS, MO.

"WE HAVE DECIDED TO STANDARDIZE 100% on Auto-Lite Spark Plugs"


BONDED
THE MOTOR WAY IS THE QUICK WAY TO SHIP
INSURED
MOTOR EXPRESS, INC.
1300 EAST NINTH
PHONE 4-3708
LITTLE ROCK, ARKANSAS
THOS. F. TUGWELL
GENERAL MANAGER
MAY 30, 1939
HOWARD A. TUNE
PRESIDENT
MR. PAT CHEW
% 655, INC.
LITTLE ROCK, ARK.
DEAR CHEW:-
HERE ARE A FEW FIGURES ON OUR EXPERIENCE WITH AUTO-LITE SPARK PLUGS WHICH SHOULD INTEREST YOU.
WE INSTALLED A SET IN A MODEL 700 WHITE TRACTOR AT 42,000 MILES. THE TRUCK NOW HAS 74,000 MILES ON THIS SAME PLUG. A SET OF AUTO-LITE SPARK PLUGS WERE INSTALLED IN A MODEL 704 WHITE AT 21,000 MILES, AND THE TRUCK NOW HAS 23,500 MILES ON THESE PLUGS.
SO FAR WE HAVE HAD NO SPLIT TIPS OR ANY CAUSE FOR REPLACEMENT OF THESE PLUGS. THE PLUGS HAVE ONLY BEEN OUT FOR ADJUSTING AND CLEANING. IN VIEW OF THIS EXPERIENCE WE HAVE DECIDED TO STANDARDIZE ON AUTO-LITE SPARK PLUGS 100%.
YOURS VERY TRULY,
Carroll Pyron
MAINTENANCE SUPERVISOR
Dependable Freight Service Between Little Rock and Points Below:
"EXPRESS SERVICE AT FREIGHT RATES"
BATESVILLE
NEWPORT
PARIS
FORT SMITH
RUSSELLVILLE
SEARCY
BARDANELLE
LITTLE ROCK
MEMPHIS
HOT SPRINGS
MALVERN
PINE BLUFF
ARKADELPHIA
HOPE
PRESCOTT
TEXARKANA
ELDORADO
AUTO-LITE
AUTO-LITE
SPARK PLUG
DATA BOOK

FREE! Every Maintenance Supervisor and Shop Foreman should have a copy of this valuable book. Write to:

THE ELECTRIC AUTO-LITE CO.

TOLEDO • *Merchandising Division* • OHIO

IGNITION ENGINEERED BY IGNITION ENGINEERS

CHANGE TO AUTO-LITE SPARK PLUGS

THE MOST IMPORTANT FEATURE OF THEM ALL...

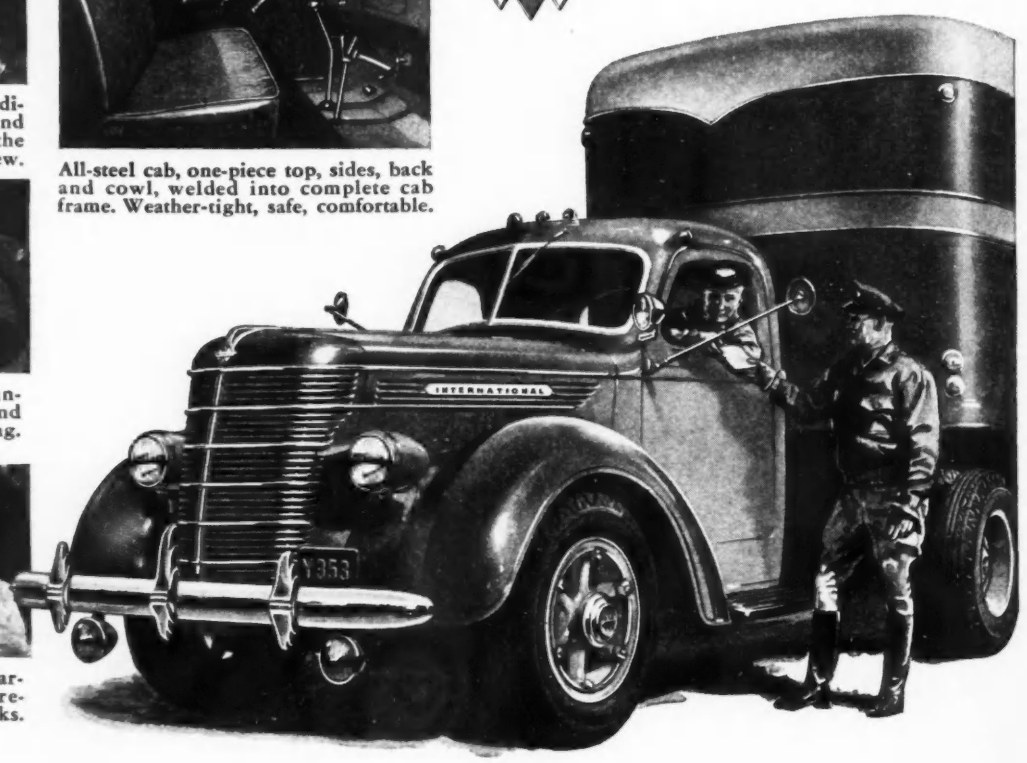
is the one that makes you money

The cylinders are individually removable and replaceable, making the engine as good as new.

All-steel cab, one-piece top, sides, back and cowl, welded into complete cab frame. Weather-tight, safe, comfortable.

Hardened exhaust-valve seat inserts retard valve seat burning, and the valves seldom need grinding.

Main and connecting-rod bearings can be quickly and easily replaced in all International Trucks.



If you happen to be mechanically inclined, go over International design and construction, inch by inch, and part by part. Then you'll understand why we call Internationals *all-truck* trucks.

You'll find feature after feature that have given Internationals their world-wide reputation. But the feature of them all is the one that Internationals will put in your cost records—the *lowest-cost hauling you have ever known.*

And it's this unequaled performance-per-dollar that sells more heavy-duty Internationals than *any other three makes combined.*

No matter what your hauling needs may be—city or town, farm or cross-country—there's an International size to fit your requirements exactly. And whether you need a sturdy half-ton pickup or a powerful six-wheeler, you can always count on International stability, service, long life and economy.

Any International Dealer or Branch will be glad to give you the names of International owners you know in your own community. These owners will tell you, first-hand, the kind of performance they're getting, and the kind you can expect from International Trucks.

INTERNATIONAL HARVESTER COMPANY
(INCORPORATED)
180 North Michigan Avenue Chicago, Illinois

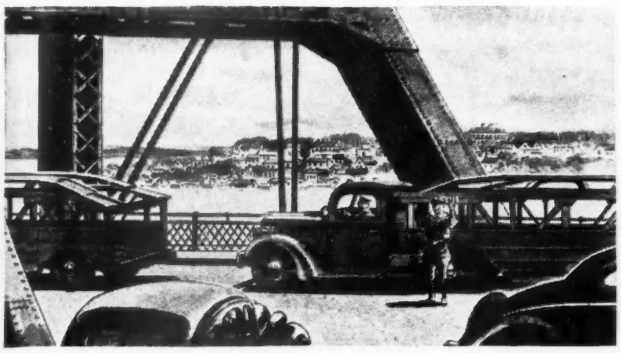
INTERNATIONAL TRUCKS

Case #487

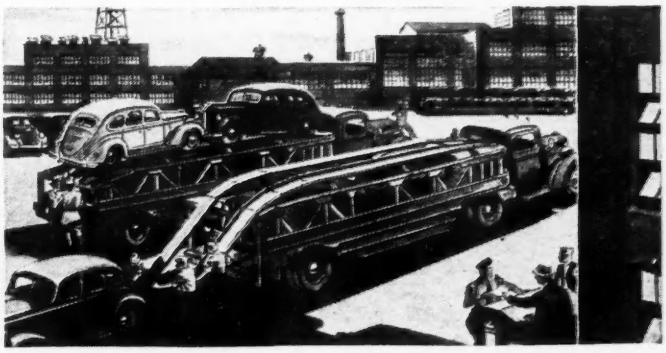
The Case of the "Pick-a-Back" Twins

—a true story from the files on Gulfpride, the motor oil that cuts consumption between drains

1. **"Maybe your Gulfpride Oil** will save me money," said a Memphis, Tennessee, car dealer, "but you'll have to do better than claim it. You'll have to *prove* it. And we'll use these two 'pick-a-back' trucks as guinea pigs in a little experiment."



2. **So, off to far-away Detroit** rumbled the pick-a-back twins. In the crankcase of one was the car dealer's regular oil; in the other was Gulfpride. So far it wasn't too tough on either oil. But what about the trip back, with each truck 11,740 pounds heavier?



3. **Detroit.** Each truck shouldered four shiny, new cars on its back —same make, same model, same weight. Then, driving at identical speed, they rumbled off for Memphis, 800 miles away. With both oils taking an equal amount of heavy punishment, could either show a clear-cut superiority over the other?

4. **Back in Memphis** with a thrifty moral for every driver! For while one pick-a-back twin had consumed *28 quarts of the competitive oil*, the other had used only *12 quarts of Gulfpride*—less than half as much! Said the delighted car dealer, "We'll use Gulfpride in all our trucks and recommend it to all our customers."

Take a tip from this Memphis experiment. Fill up with Gulfpride, keep a record of your oil consumption, and see how much *less oil* you add between drains. Notice, too, how much less you spend for engine repairs.

For you can take this as a fact: *There is no other oil like Gulfpride.* Gulfpride is made from 100% pure Pennsylvania crude by Gulf's patented and exclusive Alchlor process—a process which removes up to 20% *more* waste.

SO DRIVE IN at the Sign of the Orange Disc. Say, "Fill her up with Gulfpride!"—and you'll get the grandest lubrication money can buy! Gulf Oil Corporation—Gulf Refining Company, Pittsburgh, Pa.

Gulfpride Oil

GULF

100% Pure Pennsylvania · at Dealers' in Sealed Cans Only

BUS AND FLEET OPERATORS: Gulfpride will save YOU MONEY—Try it in your fleet TODAY!

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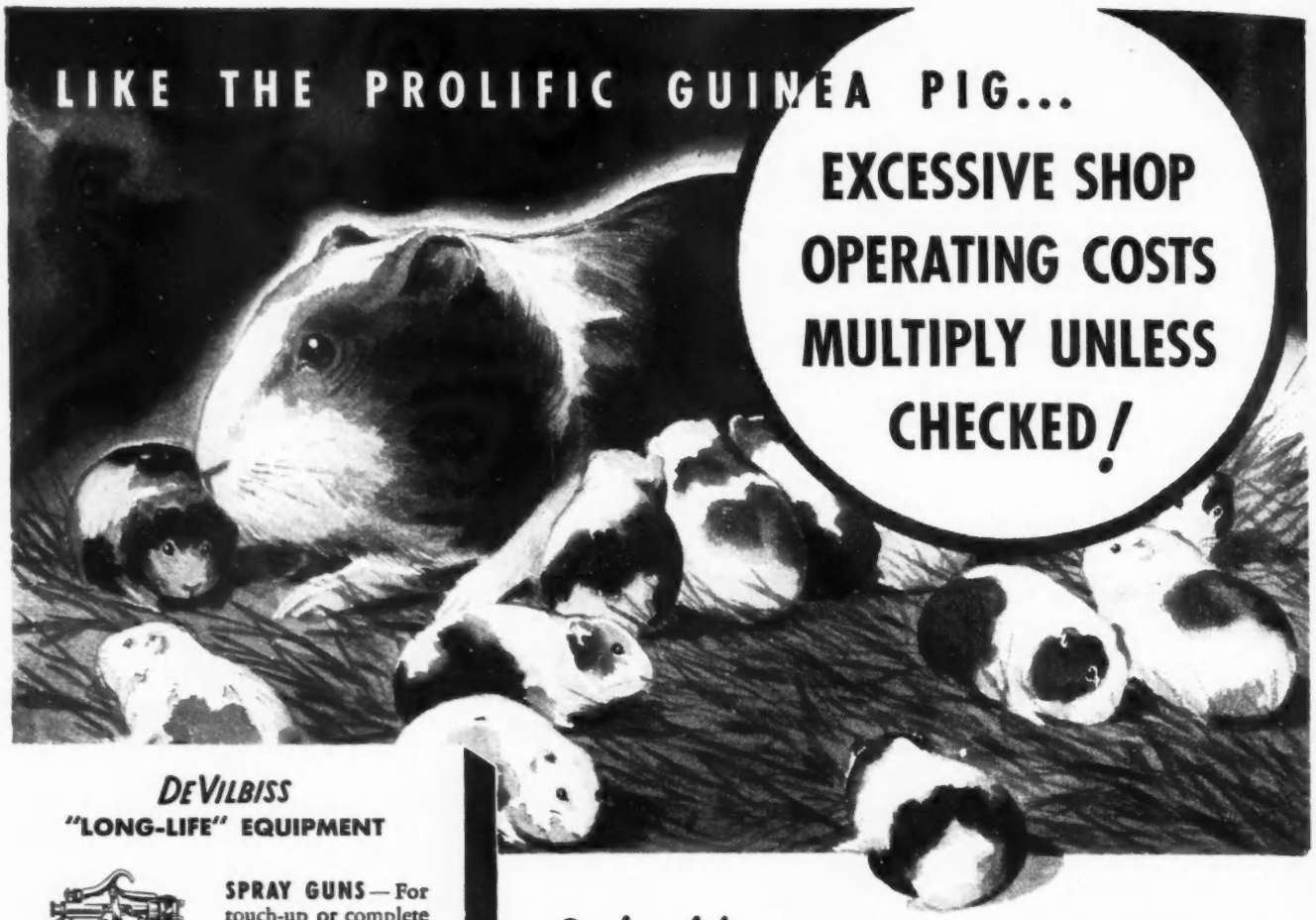
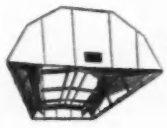


DEVILBISS "LONG-LIFE" EQUIPMENT

SPRAY GUNS—For touch-up or complete refinishing — maintenance painting operations.



CANOPY EXHAUST EQUIPMENT—For ventilation of the finishing area on complete refinishing jobs.

AIR COMPRESSORS—For any service need —¼ to 10 H.P.—vertical or horizontal types —single or two-stage.

HOSE AND CONNECTIONS—Air, water, oil, welding, gasoline pump hose. Permanent or quick detachable connections.

OIL GUNS—Spray or Stream types—hand or air operated for high-speed chassis lubrication.

Reliable DEVILBISS SERVICE EQUIPMENT IS A BIG HELP IN REDUCING SHOP COSTS!

● Small excesses in shop costs multiplied hundreds of times a year dig deep into fleet owners' profits. Excessive time charges, high repair expenses and top-heavy replacement costs must be eliminated.

Many fleet owners *are* doing it! They have lowered touch-up and refinishing costs with the same DeVilbiss Spray-Painting Equipment that produces the factory finish—at high speed—at low cost. Compressed air operating and repair costs have dropped because of the trouble-free, year-after-year performance of DeVilbiss Compressors. They've plugged profit leaks on hose replacements with that tough-tested DeVilbiss Hose. On lubrication, they get faster, longer service with DeVilbiss Oil Guns.

Get these four important cost items down to rock bottom—immediately—permanently. DeVilbiss Service Equipment will do it. Call your DeVilbiss distributor.

The DeVilbiss Company, Toledo, Ohio

DEVILBISS
SERVICE EQUIPMENT

Field Report on:

SIX YEARS OF SAVING WITH ALUMINUM BODIES

*This is another advertisement based on reports from our engineers in the field, detailing the experience of truck operators who are now using bodies or trailers constructed of Alcoa Aluminum. Facts are obtained directly from the operators.

Aluminum unit operated by Charles Sucher Packing Company since 1933.

Recent units with bodies built of Alcoa Aluminum Alloys by Superior Auto Body, Dayton, Ohio, for the Charles Sucher Packing Co., Dayton.

"Our records bear out that savings made in gasoline, tires, maintenance, etc., due to the saving on weight, and also to durability, on trucks with Aluminum bodies, are really worth considering," runs a letter from the Charles Sucher Packing Company. They know what they are talking about; they have 12 trucks fitted with Aluminum bodies, in capacities from 1½ to 12 tons. The oldest has been in service since 1933.

Note that the statement mentions *durability*. Aluminum construction is more than light. It stands up, year after year. Because it is naturally light, Aluminum can be used in thick sections; *thickness* brings the *stiffness* required to make a strong structure.

Maintenance is likewise mentioned. Aluminum resists corrosion, hence paint holds to it better, and maintenance cost is reduced. The metal is easily cleaned, providing a food transport body which is and looks sanitary.

Get these advantages in your truck operation. Leading builders are ready to construct truck bodies, trailers, tanks which save in weight and in operation cost, because they are built of Alcoa Aluminum Alloys. Ask them. ALUMINUM COMPANY OF AMERICA, 2139 Gulf Bldg., Pittsburgh, Pa.

ALCOA ALUMINUM

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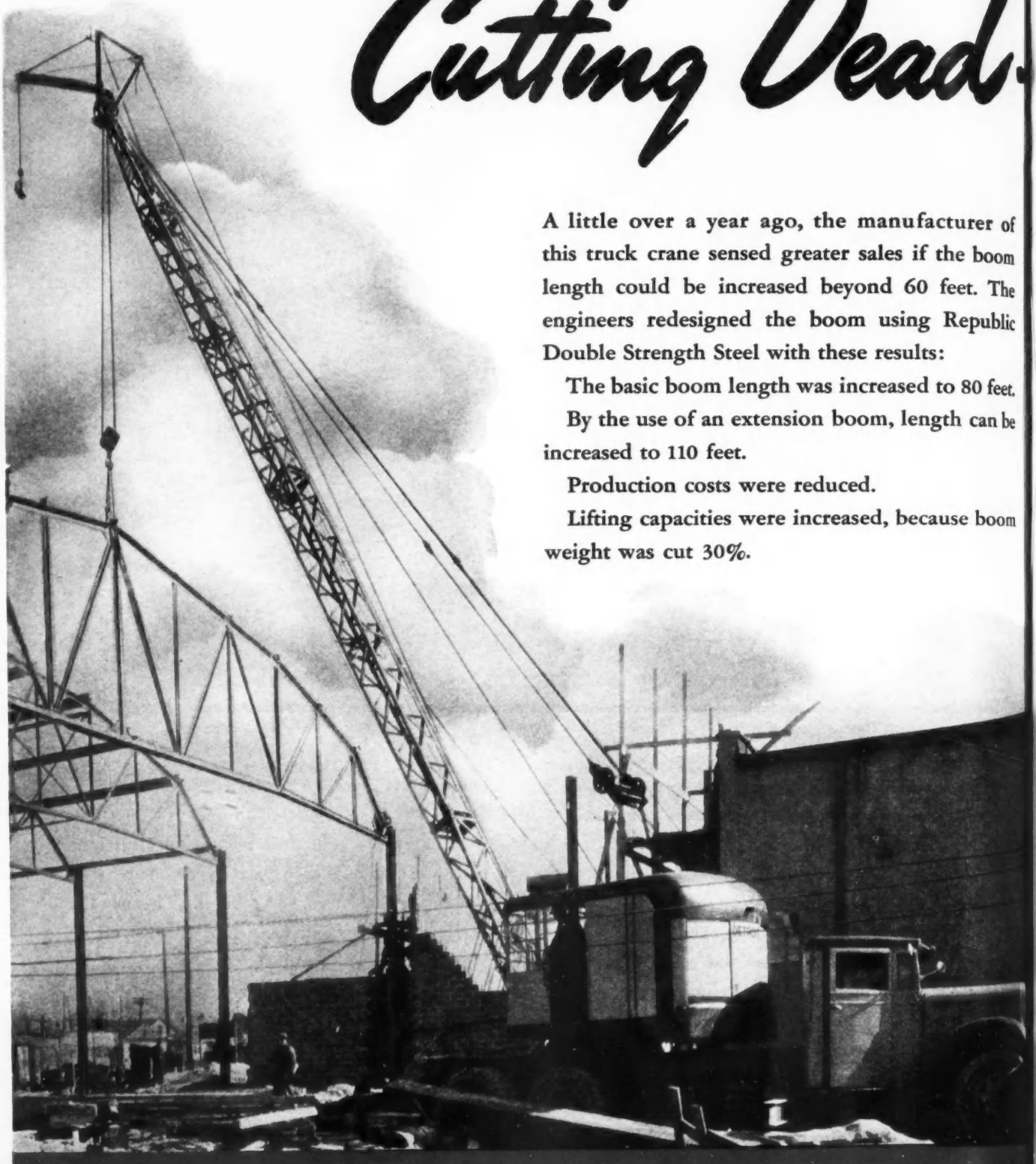
Cutting Dead



A little over a year ago, the manufacturer of this truck crane sensed greater sales if the boom length could be increased beyond 60 feet. The engineers redesigned the boom using Republic Double Strength Steel with these results:

The basic boom length was increased to 80 feet.

By the use of an extension boom, length can be increased to 110 feet.

Production costs were reduced.

Lifting capacities were increased, because boom weight was cut 30%.

REPUBLIC DOUBLE STRENGTH STEELS

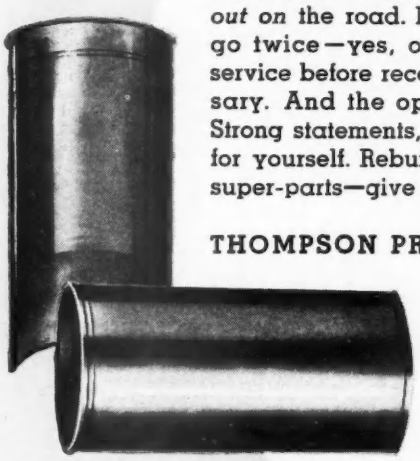
SHEETS • STRIP • PLATES • BARS • BOLTS • NUTS • RIVETS

LIGHTER • STRONGER • MORE CORROSION-RESISTANT

HERE'S HOW YOU CAN BUILD A "Thompson" SUPER-ENGINE!

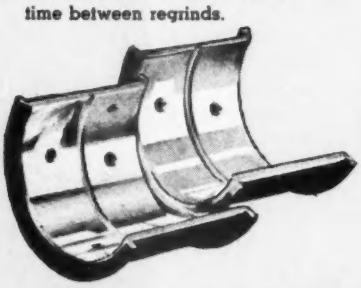
● Profits in trucking operations come from reducing maintenance cost and in keeping units out of the repair shop and *out on* the road. Engines rebuilt with these Thompson Parts, go twice—yes, often three times as long in heavy-duty service before reconditioning or replacement of parts is necessary. And the operating cost of these super-jobs is less. Strong statements, indeed, but you can easily learn the facts for yourself. Rebuild just one of your motor units with these super-parts—give it the works . . . and let results tell the story.

THOMPSON PRODUCTS, INC. • CLEVELAND-DETROIT



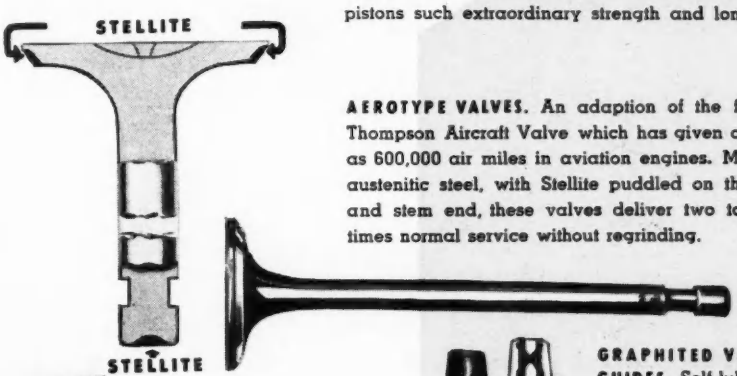
NITRICASTIRON CYLINDER SLEEVES. A sensational European development. Hardness 800-1,000 Brinell! 200,000 to 400,000 miles without reconditioning is common experience. Mirror smooth—triple ring and piston service.

DURACROME VALVE SEATS. Hard, one-piece patented alloy. Expansion same as cast iron block. Eliminate block pounding and valve pickup. Improve valve seating. Double the time between regrinds.



ENGINE BEARINGS for main and con rod. The original equipment leader in trucks, buses and passenger cars. Steel-back, "jewel finish"—accurate to 2½/10,000th of an inch!

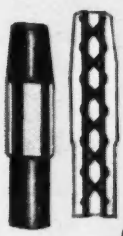
AEROTYPE PISTONS. Made of a special aluminum alloy, with double thick skirt, reënforced head and diamond bored pin bosses. The cross-section shows the heavy-duty design which gives these pistons such extraordinary strength and long life.



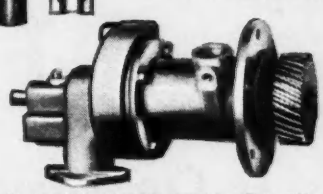
AEROTYPE VALVES. An adaption of the famous Thompson Aircraft Valve which has given as high as 600,000 air miles in aviation engines. Made of austenitic steel, with Stellite puddled on the seat and stem end, these valves deliver two to three times normal service without regrinding.

SWEDISH STEEL VALVE SPRINGS Matched sets. Unequalled for heat resistance. "Blue-oil" acid-resisting finish. Uniform tension at all points; seats valve evenly, prevents uneven valve guide wear.

CHROME-PLATED PISTON PINS The *modern* piston pin. Chrome-plating (hardest known metal) wears longer, resists engine acids. Matched sets. Diameters held to 1/10,000th! Super-smooth—longer life for pin bosses, too.



GRAPHITED VALVE GUIDES. Self-lubricating. Special Chrome-nickel alloy, 90-95 Rockwell hardness. Burnished holes of correct diameter—no reaming necessary.



PACKLESS WATER PUMP. Grit-filled water is sealed *outside* of pump away from bearing surfaces. Runs up remarkable mileage in tough service. Heavy-duty construction throughout.

Build these parts into an old engine—then compare performance and maintenance costs with any new engine!

Thompson Products

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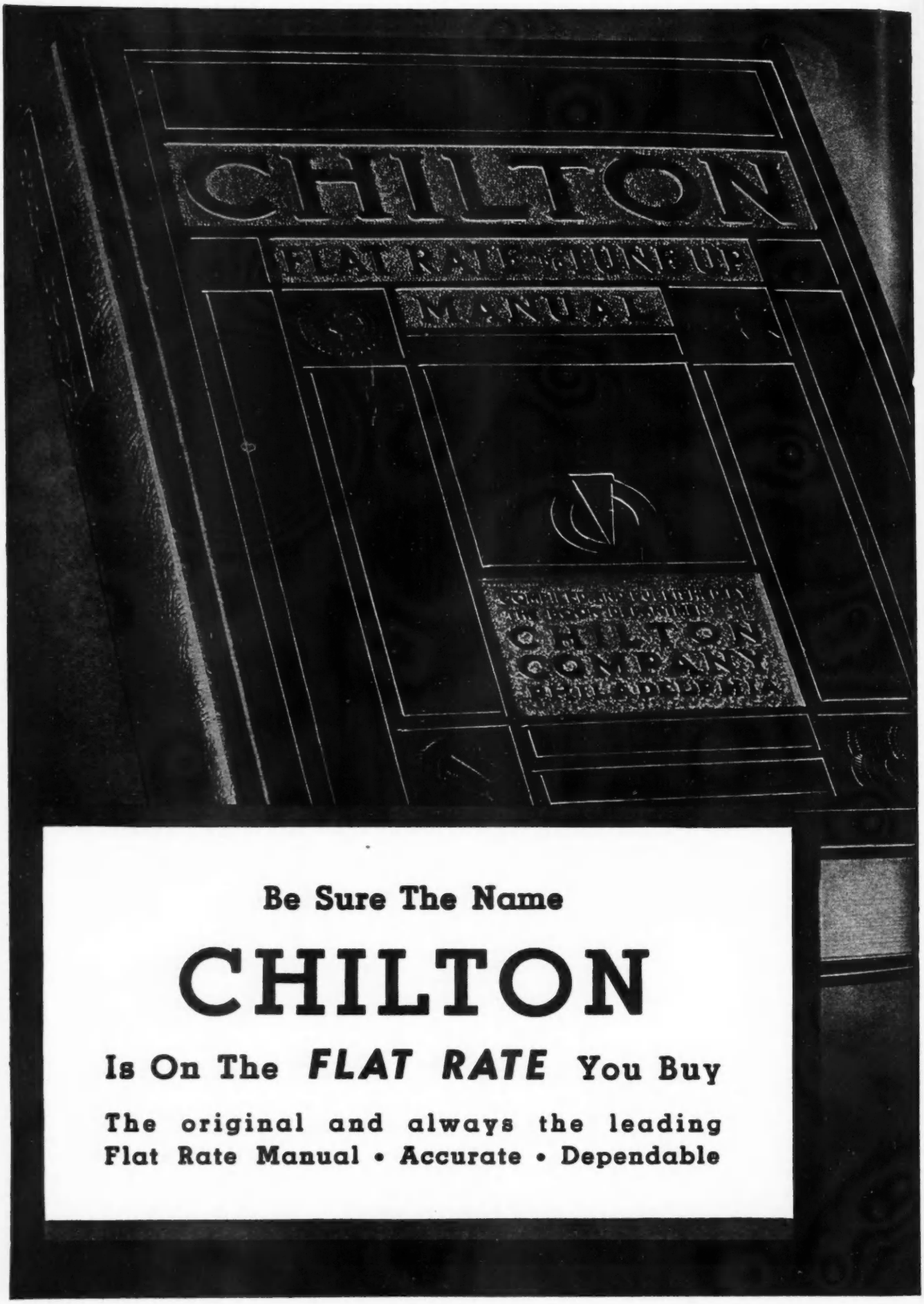

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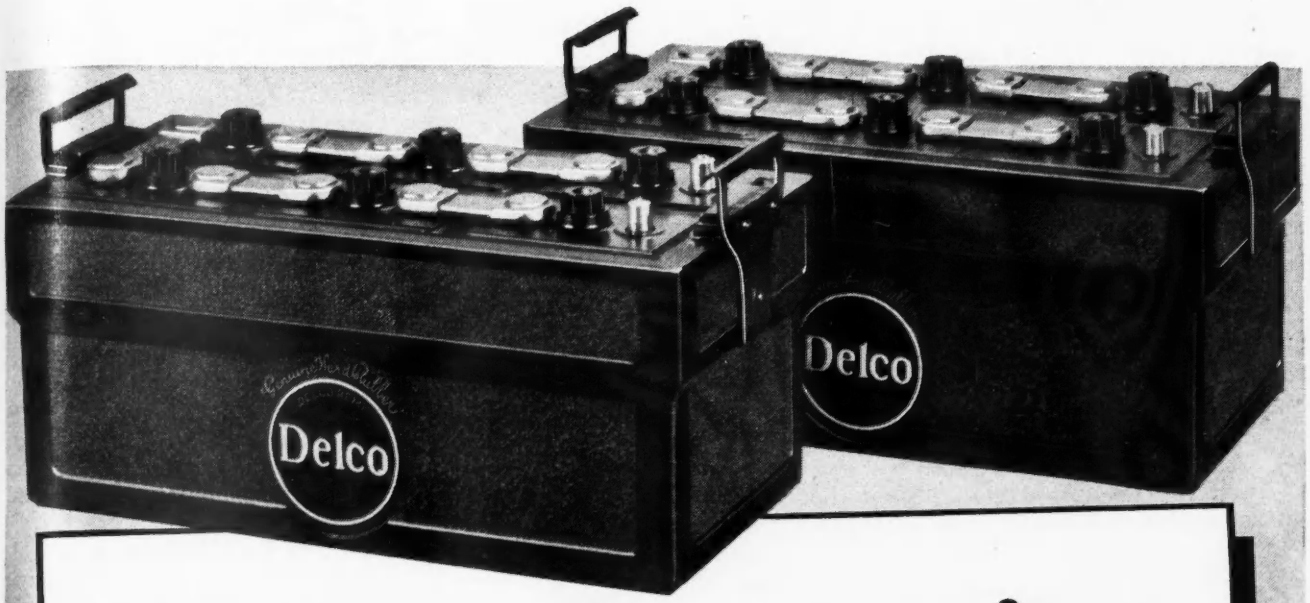

Delco Batteries

should be specified for

YOUR DIESEL EQUIPMENT

THESE big, 12-volt Delco batteries are built expressly for Diesel service! Both the 21- and 25-plate types have special construction features that assure long life and delivery of full power for starting. The cell connectors are made of copper and protected by a thick coating of acid-resisting lead. Heavy copper inserts form the center of each post. This liberal use of copper conductors assures *full* battery power to the starting motor. With dual insulation and genuine hard rubber cases, these Delco batteries give dependable operation and trouble-free performance under the most severe conditions. Specified as original equipment for the new General Motors Diesel line, they are meeting service requirements on all types of Diesel power applications.

A COMPLETE LINE OF ELECTRICAL EQUIPMENT FOR DIESEL ENGINES

Delco-Remy offers a complete line of electrical equipment for Diesel engines. Starting motors, equipped with solenoid-actuated Dyer drives, are in service on various types of Diesel installations, in the motor transport field, on stationary engines and on marine Diesel power plants. Delco-Remy generators and voltage regulators with capacity ranges covering many types of coach and marine operations are in wide use today. Series-parallel starting switches permit 24-volt starting power with 12-volt generators, batteries and standard accessories. Built for use with Diesel engines, these Delco-Remy units have established their reputation for dependable performance.

UNITED SERVICE MOTORS

Delco-Remy Diesel batteries and parts for all Delco-Remy electrical equipment units are sold and serviced through United Motors Service branches and distributors located in all parts of the country. This wide availability of parts and service is an important factor to consider when you select your equipment.

Delco-Remy

ANDERSON, INDIANA

World's Largest Manufacturer of Automotive Electrical Equipment

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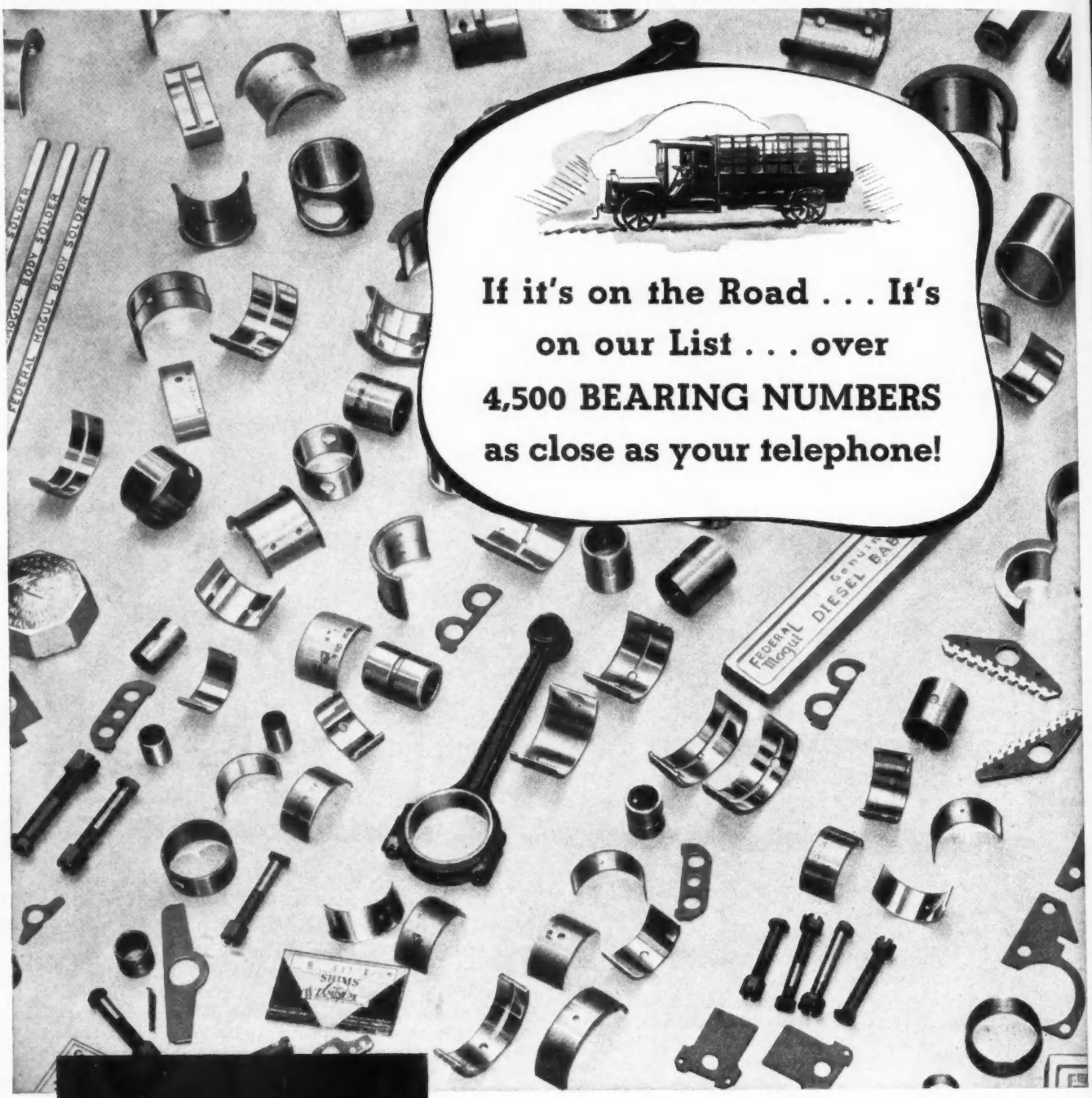

If it's on the Road . . . It's on our List . . . over 4,500 BEARING NUMBERS as close as your telephone!

FEDERAL Mogul

The only complete line, with a 40-year reputation for quality and accuracy . . . giving you immediate service on ANY service bearing, bushing, shim, bolt and nut assembly, rebabbitted connecting rod, as well as solders, babbitts, bronze bars—to help you promptly service any car, truck or tractor engine on the road! Just telephone your Federal-Mogul Jobber!

DON'T GUESS AT THE CAUSE OF OIL PUMPING!

Worn bearings are a principal cause of excessive oil consumption. When you have an engine opened up, to correct oil pumping, always check the bearings. If worn, replace in sets with Federal-Mogul oil control bearings, to restore power, pep, economy!

The Federal-Mogul Bearing Oil Leak Detector gives you a quick, accurate test of ALL engine bearings, just by dropping the oil pan. Low-priced. Portable. Ask your jobber for a demonstration!

The Federal Mogul Portable Bearing Oil Leak Detector

FEDERAL-MOGUL CORPORATION • DETROIT, MICH.

FREE!

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These numbers agree with the numbers before the paragraphs below. They are also the same as the numbers of the pages on which manufacturers' advertisements appear. Check numbers on the post card, corresponding to information desired. Mail it to us. We'll forward your request to the advertisers. Their salesmen may call on you.

Over 100 Ways to
SAVE MONEY
In the Operation of Your Fleet

NOTE to Advertisers and Advertising Agencies

Forms for This Feature Close* FINALLY *on the 19th of the Month Preceding Publication Date. These Paragraphs Are Written from Current Advertising. Get It Here on Time.

FC The advanced features of the New REO are listed on the front cover. Send for literature, or check post card.

IFC Let Dodge truck owners, on Inside Front Cover, tell you why DODGE outworks and outwears any truck they've ever owned. For further details write, or check post card.

IBC For better performance insist on genuine Lynite T-Slot LO-EX Pistons. See Inside Back Cover. Write for details, or check post card.

BC When FOUR WHEELS Drive, you'll get "Proven-Safety." See Back Cover. For full details write, or check post card.

1 Read the CUMMINS Diesel story on page 1. Write or check post card for further particulars about faster schedules and other Cummins Diesel advantages.

2 Turn to page 2 and see what "Every Inch a HIGHWAY" means to you. Send for literature, or check post card.

3 TRU-STOP—The Air-Conditioned Brake—is worthy of your investigation. Read about it on page 3, then write or check post card for full information.

4 Texaco's HAVOLINE MOTOR OIL will increase mileage per quart and result in fewer road failures for your fleet. Read pages 4 and 5. Write for full facts, or check post card.

6 DITZLER Lacquers and Synthetic Enamels are easy to apply, dry quickly and provide lustrous appearance. See page 6. For further facts write, or check post card.

7 SIOUX offers Flexibility for any sanding or leveling job with SIOUX PHENOL DISC PADS. See page 7. Write Albertson & Co., Inc., for details, or check post card.

8 GMC Trucks have more power, drive easier and save more on gas See page 8. Write or check post card for further data.

9 Step up performance and cut haulage costs —use CHAMPION Spark Plugs in your trucks. See page 9. Write for complete details, or check post card.

10 Read the story on page 10 then investigate WHITE Super Power TRUCKS for yourself. Write for details, or check post card.

11 Read on page 11 what the STANDARD Engineer did for City Coach Co. Write to your local Standard Oil office and get these engineers to aid you, or check post card.

12 GM Diesel Engines prove better performers on hills . . . see page 12. For further details write, or check post card.

13 LION NATURALUBE—the safe oil for all internal combustion engines. See page 13. Write or check post card for complete information.

14 It pays to use the longest wearing parts—see your McQUAY-NORRIS JOBBER. See page 14. Or write for complete details, or check post card.

15 Write today for your copy of the AUTO-LITE Spark Plug Data Book offered on page 15. Or check post card.

16 No matter what your hauling needs—there's an INTERNATIONAL TRUCK size to fit your requirements exactly. See page 16. For full details write, or check post card.

43 Every truck in modern traffic ought to have MODERN BENDIX B-K Controlled Vacuum POWER BRAKING. See page 43. Write or check post card for further data.

45 The EXIDE BATTERY line is complete—with Heavy Duty Exides for all commercial vehicles. See page 45. Get complete details by writing or check post card.

47 The GULFPRIDE OIL story on page 47 will interest every fleet operator not now using Gulf products. Write for further details, or check post card.

48 Check excessive shop operating costs with DeVILBISS Service Equipment. See page 48. Get complete details by writing, or check post card.

60 The SERVIS RECORDER helps prevent accidents by removing the incentive for speeding. Write for folder offered on page 60, or check post card.

61 OSHKOSH, on page 61, announces new Improved Truck Models. For full details write today, or check post card.

62 It is just good operating to equip your fleet with LEE DeLuxe TIRES made with LEE Double-Life Cord. See page 62. Write or check post card for further information.

63 The new WILLARD BATTERY Fleet Service Program is outlined on page 63. Send for details today, or check post card.

65 AC—for 30 years the quality Spark Plug. Read the facts on page 65. For further information write, or check post card.

66 Write today for your copy of the HANSEN Hardware Catalog, offered on page 66. Or check post card.

67 Get the advantages of ALCOA ALUMINUM truck bodies when you get new trucks. See page 67. Write or check post card for further details.

68 Read about the advantages of REPUBLIC Double Strength STEELS on pages 68 and 69. Write or check post card for further information.

70 Use a plug designed for heavy duty on heavy duty jobs—use EDISON SPARK PLUGS. See page 70. Send for literature, or check post card.

71 Turn to page 71 and discover how to build a THOMPSON Super-Engine. Get complete details by writing, or check post card.

74 International's CAMPBELL Lug-Reinforced TIRE CHAINS are the answer to Safety and Mileage on Tire Chains. See page 74. Write direct for details and special discounts, or check post card.

75 WAGNER offers everything for complete Hydraulic Brake Service. See products and prices on page 75. For additional information write, or check post card.

78 Fill in the coupon on page 78 for money-saving facts about STEWART-WARNER Motor Mile Tachometers. Or check post card.

79 For every transport problem—TRAILMOBILE—the easiest pulling trailer on the road. Models pictured on page 79. For information write, or check post card.

80 Read about the HANDY Visible Action GOVERNOR on page 80. Write or check post card for detailed information.

81 Read about the new FORD V-8 ¾-tonner on page 81. For further information write direct, or check post card.

82 WALKER leads in JACKS—see page 82. Write or check post card for information about complete line.

83 Check the features of Prest-O-Lite's new SILVER JUBILEE Heavy-Duty Battery on page 83. Write for full details today, or check post card.

84 Page 84 pictures some EBERHARD Automotive Hardware suggestions for advanced Truck Design. Write for catalog, or check post card.

85 FRUEHAUF TRAILERS give you "Engineered Transportation." See page 85. For further details write, or check post card.

86 When you buy trucks, specify FULLER TRANSMISSIONS. See page 86. For further details write direct, or check post card.

87 Do you know why only 1 in 100 commercial cars has a Diesel engine? WAUKESHA tells you why on page 87. Write for literature, or check post card.

89 In all kinds of weather, GUIDE Super-Ray driving lamp proves itself the friend of all night-run drivers. See page 89. Write or check post card for further data.

90 Chart on page 90 shows how simple it is to install AUTOPULSE Electric Fuel Pump. Write for further details, or check post card.

91 You can get instant service on TIMKEN Tapered Roller Bearings. See page 91. Send for literature, or check post card.

Over 100 Ways to Save Money

(Continued from Preceding Page)

93 Turn to page 93 and read about the new Longer-Wearing ALLWEATHER Good-year tire. For full details write, or check post card.

94 Read on page 94 why so many operators prefer GATKE Brake Liners. Write for full facts, or check post card.

95 The outstanding features of the new PACKARD 500 Heavy-Duty Ignition Cable are described on page 95. Write for full facts, or check post card.

96 Protect your fleet at night—equip it with CONNECTICUT Directional Safety Signals. See page 96. Get complete details by writing, or check post card.

97 It will pay you to use Toledo AEROTYPE Valves, Pistons, Pins. Read page 97. Send for literature, or check post card.

99 Turn to page 99 and find out why CHEVROLET leads in motor trucks sales. Write or check post card for additional facts.

100 Read about FABER LABORATORIES—the recognized authorities on analyses of used oil—on page 100. Get complete details by writing, or check post card.

101 Before buying, write for quotations on SHULER AXLES (illustrated and described on page 101) or check post card for details.

103 Forget your bearing problems by giving them to the nearest SKF Distributor. See page 103. Write or check post card for further information.

105 All HEIN-WERNER Hydraulic Jacks are built right and priced right. Models on page 105. Get complete details by writing, or check post card.

106 Safeguard your drivers by equiping your fleet with K-D Sho-Turn Junior right and left turn signals. See page 106. For further details write or check post card.

107 DELCO BATTERIES should be specified for your diesel equipment. See page 107. Get complete details by writing, or check post card.

108 Don't guess at the cause of oil pumping—use a FEDERAL MOGUL Portable Bearing Oil Leak Detector. See page 108. For further facts write, or check post card.

110 Write to the nearest WEBSTER-IZING agency—list on page 110—for information on high quality retreading-recapping. Or check post card.

113 Cut fleet costs with SEIBERLING Special Service, Heat Vented Tires. See page 113. Write for full details, or check post card.

115 Take advantage of real money-saving by insisting upon Parish Heat-Treated Frames. See page 115. Write or check post card for further information.

121A Insist on BOLSER Flares, Clearance Lights, Reflectors, Turn Signals, Mirrors. See page 121. Write or check post card for more information.

121B The GRINNELL THERMOLIER will keep your mechanics warm enough to spend every working minute working. See page 121. Write for 48-page book today, or check post card.

122A Investigate American Automatic Devices' PROTECTO—rubber rim Safe-T-Lite Mirror. Pictured on page 122. Get complete details by writing or check post card.

122B Use DIESEL FUEL with Gasoline Trucks. Investigate on page 122. Write for complete information, Dieselizer Corporation of America, or check post card.

122C If you're replacing universal joints, you need BLOOD BROTHERS Universal Joints. See page 122 and check post card for more information.

122D "A. W." Rolled Steel FLOOR PLATE is safe in any weather. See page 122. Write Alan Wood Steel Co. for booklet, or check post card.

123A Every fleet owner should have the POWER BRAKE Repair Kit. Write for free catalog offered on page 123, or check post card.

123B Hurry-up jobs can be licked in half the time with SNAP-ON Tools. See page 123. Get complete details by writing, or check post card.

123C BURCH Hydromotor Hoists and Dump Bodies—just one moving part, no oil lines. Illustrated on page 123. Write or check post card for further details.

125 You can depend on ALEMITE—world's largest manufacturer of lubrication products. See page 125. Send for literature, or check post card.

126A STERLING Motor Trucks—Diesel and Gasoline—give greater profits. See page 126. Write for full information, or check post card.

126B Over 70 per cent of trucks and buses are ZOLLNER Heavy-Duty Piston equipped. See page 126. Get complete details by writing, or check post card.

126C For more miles per dollar, switch to BOWERS Batteries. See page 126. Send for literature, or check post card.

126D More profits per job with HEIL Bodies and Hoists. See page 126. Write or check post card for free catalog.

126E The important features of the WALKER DYNAMOTIVE are set forth in their advertisement on page 126. Send for literature, or check post card.

126F Each GENERAL Truck Tire is built to give you more miles for less money. See page 126. For full details write, or check post card.

126G THORNTON-eered trucks do work of trucks twice as large at almost half cost. See page 126. Write for details, or check post card.

126H Use BALDOR Ball Bearing GRINDERS—they won't burn out. See page 126. For complete facts write, or check post card.

127A BEAURLINE FOUNTAIN BRUSH speeds up washing time for fleets. See page 127. Write or check post card for further details.

127B P Series Timken Brakes are now standard on GRAMM TRAILERS. See page 127. Get complete details by writing, or check post card.

126I Be sure to specify AMERICAN BOSCH Fuel Injection Equipment for diesel engines. See page 127. For full information write, or check post card.

127C See illustration of NOC-OUT—the hose clamp with the thumb screw—on page 127. Further data can be obtained by writing direct or checking post card.

127D FITZGERALD Bulldog GASKETS are best for modern heavy duty service. See page 127. Send for literature, or check post card.

127E JONES Portable Tachometer gives direct, instantaneous reading. A few of the users named on page 127. Send for literature, or check post card.

127F For a profitable, economical and safe vehicle on the road—TRUCKTOR 6 wheel TRUCKS. See page 127. Get complete details by writing, or check post card.

128A Black Diamond all-rubber seat cushions last longer and have no upkeep expense. See the Karpex advertisement on page 128. Write or check post card for sizes and prizes.

128B For information on DRY-ZERO Bound-Batt Insulation, write direct (address on page 128) or check post card.

128C Investigate AUSTIN—manufacturers of engineered trailer products. See page 128. For full information write, or check post card.

128D WONDER WELD seals engine cracks speedier and permanently. Write Miller Mfg. Co. for folder offered on page 128, or check post card.

128E Write for the bulletin describing AVAILABLE Trucks offered on page 128, or check post card for details.

128F KINNEAR TRUCK DOORS are convenient, burglar proof, fire proof, more durable, and ALL METAL. See page 128. Details sent upon request, or check post card.

128G Keep your vehicles moving economically with HALL Valve Servicing Equipment. See page 128. Write for details, or check post card.

128H TELEOPTIC DELUXE—a safer turn signal for package trucks. See page 128. Write or check post card for details.

128I Write for catalog 38AC and 38BC on FRINK SNO-PLOWS. Read page 128, or just check post card for details.

129A GAR WOOD Hoists and Dump Bodies are preferred by all types of operators. See page 129. Write for descriptive literature, or check post card.

129B TIMKEN 3 for 1 AXLES are the accepted standard. See page 129. For full details write, or check post card.

129C For running-in new and rebuilt engines use auxiliary lubricants containing "dag" brand colloidal graphite. See page 129. Write Acheson Colloids Corp., or check post card for details.

129D Cut corners in price and performance with MARMON-HERRINGTON All-Wheel-Drive Fords. See page 129. Write or check post card for complete particulars.

129E ST. PAUL Hydraulic Hoists and Bodies are made for every model of truck. See page 129. For full details, write or check post card.

129F CARPENTER Gear & Engine Corp. offers Chrome-Nickel Alloy cylinder Heads and Blocks . . . guaranteed . . . for use on trucks and buses. See page 129. Write or check post card for details.

129G Investigate GUNK—the high performance motor block and chassis degreaser. See Curran Corp. advertisement on page 129. Write for literature, or check post card.

129H It's good economy to buy EDWARDS Quality Semi-Trailers. See page 129 and check post card for information.

132 Read what truckers say about GOODRICH Triple Protected SILVERTOWN TIRES on page 132. Write or check post card for complete information.

Webster-izing

THE HIGHEST QUALITY OF RETREADING—RECAPPING

A FEW WEBSTERIZING AGENCIES
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SUPER TIRE SERVICE, Knoxville, Tenn.
SIDNEY M. DRAKE CO., Alton, Ill.
GRASK COMPANY, Des Moines, Ia.
EDWARDS TIRE COMPANY, Madison, Wisc.
CHARLESTON TIRE CO.,
RETREADING COMPANY, Charleston, S. C.
MILLER TIRE SERIVCE, Columbia, S. C.
Write for the one nearest you!

WEBSTER RUBBER COMPANY, WARREN, OHIO

Power-View of a GLOBE Heavy Duty BATTERY

THIRTY-EIGHT and six-sevenths (38-6/7) square feet of plate area, exposed to electrolyte, provide the brute power which Globe Heavy Duty Battery No. 135 delivers. Generous plate capacity and Dual Insulation (Rubber and Wood Separators) are standard *extra-values* of all Globe Heavy Duty Batteries — assuring EXTRA Spinning Power . . . all-weather Split-second starting . . . long life . . . stamina . . . and notable economy. Write for Bulletin 86-C and find out how you can *save more than you pay* for truck or bus batteries.

GLOBE-UNION INC., Milwaukee, Wisconsin
Twelve Factories and Branches

Actual photo of positive and negative plates from Globe Heavy Duty Battery No. 135. Standing beside this impressive panel, the Service Man holds one plate with rubber and wood separators to emphasize the extra value of Dual Insulation.

For trucks and busses (gas engine or Diesel) and commercial vehicles.

GLOBE BATTERIES
AUTOMOTIVE - HEAVY DUTY - RADIO - POWER & LIGHT

Kingham UNIVERSAL

INDEPENDENT WHEEL TRAILER

Four-Wheel Braking. Four Individual Hubs Each Fully Equipped with Timken Bearings. Increased Flexibility.

Kingham-Lindsay Body—Lightweight, Sturdy

Write, Call or Phone Your Nearest Kingham Distributor

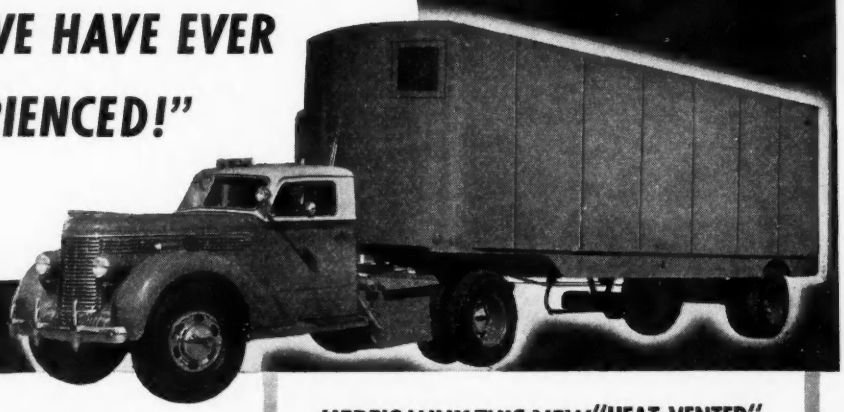
KINGHAM TRAILER COMPANY

INCORPORATED

LOUISVILLE **KENTUCKY**

"OUR SEIBERLINGS ARE DELIVERING MORE TROUBLE-FREE MILEAGE THAN WE HAVE EVER BEFORE EXPERIENCED!"

New ten-wheeler just put in service by McLean Trucking Company of Fayetteville, North Carolina—one of eleven Seiberling-equipped tractors and trailers hauling from the Carolinas to New England.



"On our **11** tractors and trailers working through trips from Carolinas to New England we have used about every known make of tire. Since you sold us your Special Service "Heat-Vented" Tires, we find that these Seiberling's deliver more trouble-free mileage than we have ever before experienced. That's why our fleet now operates practically 100% on Seiberling Tires!"

. . . SAYS MR. M. P. McLean Jr.

OF FAYETTEVILLE, N. C.

• Let YOUR Records Prove to YOU That This New Tire Cuts Costs

If you want PROOF of what the new Seiberling Special Service "Heat-Vented" Tire can do, try a set or a pair of these remarkable tires on one of your trucks. Then check the results mile for mile and dollar for dollar against the best performance you are now getting. *We'll rest our case on the results!* Let us help you arrange such a test demonstration. Write TODAY for details.

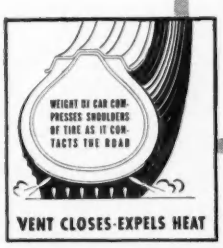
THE SEIBERLING RUBBER COMPANY
AKRON, OHIO
The Seiberling Rubber Company of Canada, Ltd.
Toronto, Canada

HERE'S WHY THIS NEW "HEAT-VENTED" TRUCK AND BUS TIRE DELIVERS SUCH PHENOMENAL MILEAGE!

1. "SAF-FLEX" CORD, a NEW Seiberling development, that retains its strength—minimizes flex breaks. Saf-Flex develops less internal friction heat—makes for a cooler running tire.

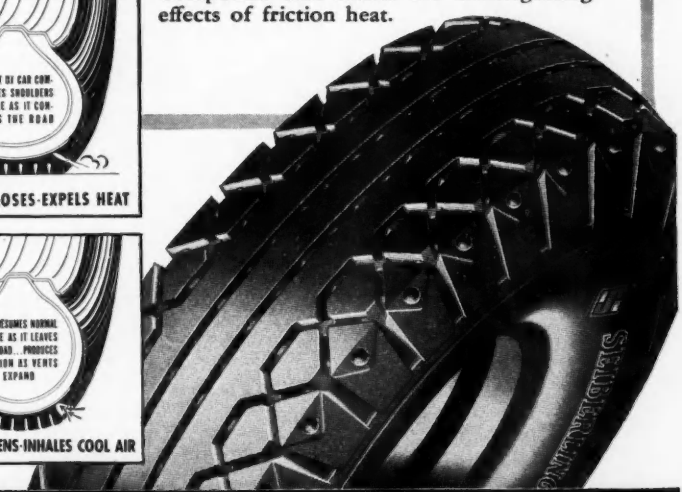
2. "HEAT VENTS"—found in no other truck tire in the world—actually expel internal friction heat from the blowout zone. See illustration at left.

3. "THERMO WELD" CUSHION GUM protects this new truck tire against tread separation—literally welds the tread and carcass into one inseparable unit. Thermo Weld Cushion Gum is a recently developed Seiberling Compound that resists the disintegrating effects of friction heat.



VENT CLOSES-EXPELS HEAT

VENT OPENS-INHALES COOL AIR



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SPECIAL SERVICE HEAT VENTED TRUCK TIRES

BUILT WITH SEIBERLING "SAF-FLEX" CORD

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Wilshire Oil Co., of Los Angeles, operates these fine semi-trailers

Smart equipment of a National City, Calif., oil distributor

Yakima, Wash., is the home of this big Studebaker tractor model

Operated by Standard Oil Co. of California at Spokane, Wash.

FAVORITES in fast West Coast gasoline service

As in the Middle West, the East and the South, Studebaker Trucks on the Pacific Coast are serving the foremost industries. Petroleum products distributors, for example, find Studebaker reliability, low cost and smart looks decided assets.

★

Studebaker Trucks range up to 20,000 pounds gross rating—32,000 pounds gross train rating.

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They are built in both Cab-Forward and Standard Series Models.

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They are sold and competently serviced throughout America and foreign countries.

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THE STUDEBAKER CORPORATION

TRUCK DIVISION

SOUTH BEND, INDIANA

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With every strike the angler's rod is bent far and hard—sometimes almost double by his game quarry—yet after each prized fish is landed the rod returns to its original shape, straight and true. It is spring back that makes the rod ready for the next fish, and the next, and the next.

Just so it is with Parish Heat-Treated Truck Frames. No matter what the stress or strain, Parish Heat-Treated Frames always return to their original shape. The elastic limit in Parish Heat-Treated Frames is so high that only a twist or bend that wrecks the truck can keep them from returning to their original position.

When every part of a truck or a trailer depends upon the frame to hold it in place, the elasticity—the spring back—of the frame has added importance. There's no adjusting ball bearings to two ten-thousandths of an inch or clutch plates to within three thousandths of parallel to correspond to each new bend or twist in frames of ordinary steel.

You'll find real money-saving in this absence of excessive wear on parts with elastic frames. Take advantage of it by insisting upon frames with a spring back—Parish Heat-Treated Frames.

PARISH PRESSED STEEL COMPANY, Reading, Pa.
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PARISH

PRESSED-STEEL • HEAT-TREATED FRAMES
FOR TRUCKS AND TRAILERS

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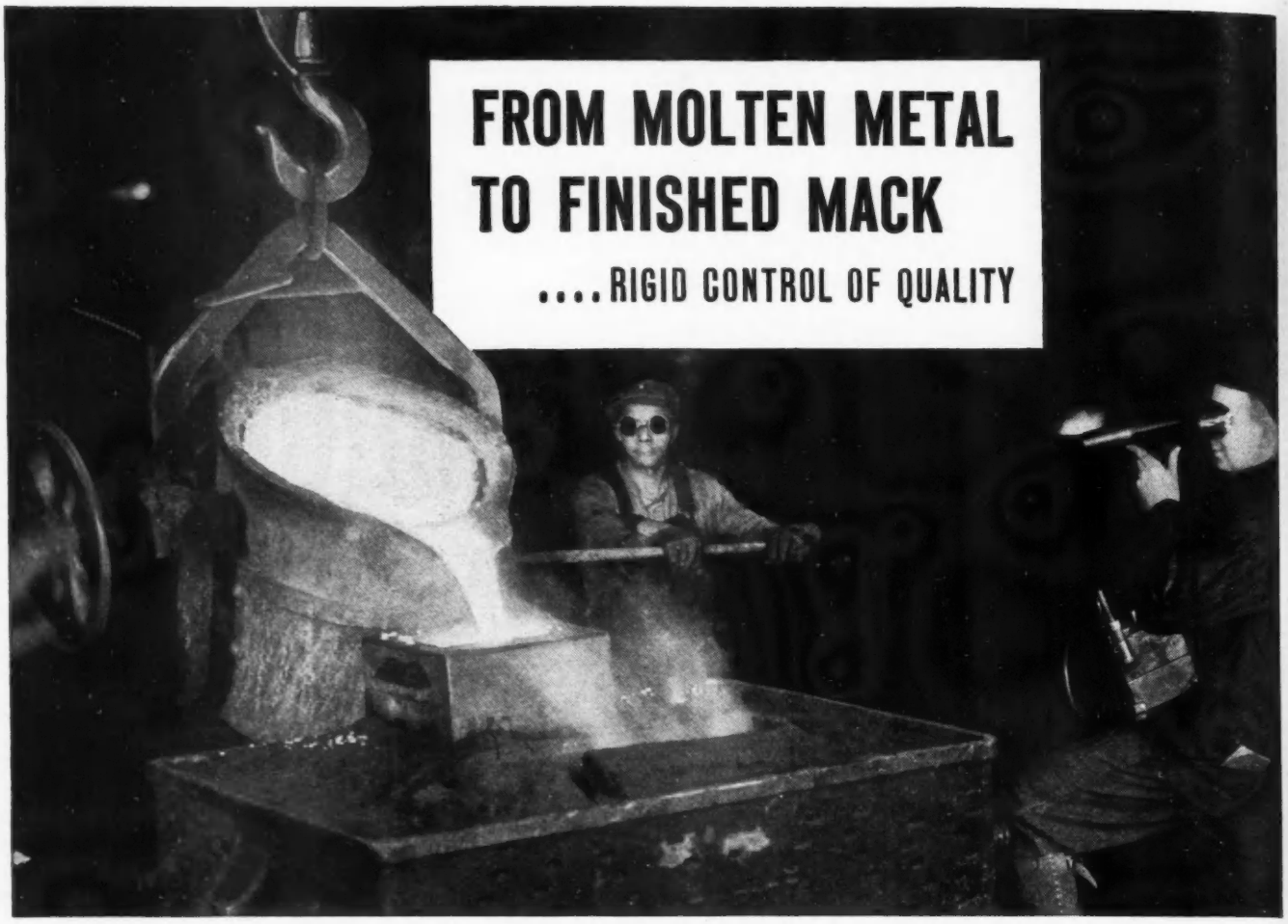

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● Through 39 years of specialization in truck-building, Mack has developed a formula for *stamina* which means more dependable, more economical hauling than you could ever get with a "price-built" truck. This quality formula is rigidly adhered to right from the selection of raw materials and specifications for all Mack parts. Above, blazing hot alloy iron pours into a mold for a cylinder block casting. An experienced workman checks the temperature with an optical pyrometer.

Whether you need the largest truck in the world or the new light-weight Mack at $675.00*... there's a Mack specifically built to do *your* kind of job at rock-bottom cost.

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**f.o.b. Allentown, Pa., for standard chassis. Cab, body, and taxes extra.*

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THE MOST COMPLETE LINE OF TRUCKS IN THE WORLD— 1 TO 30 TONS

DULUX lasts longer

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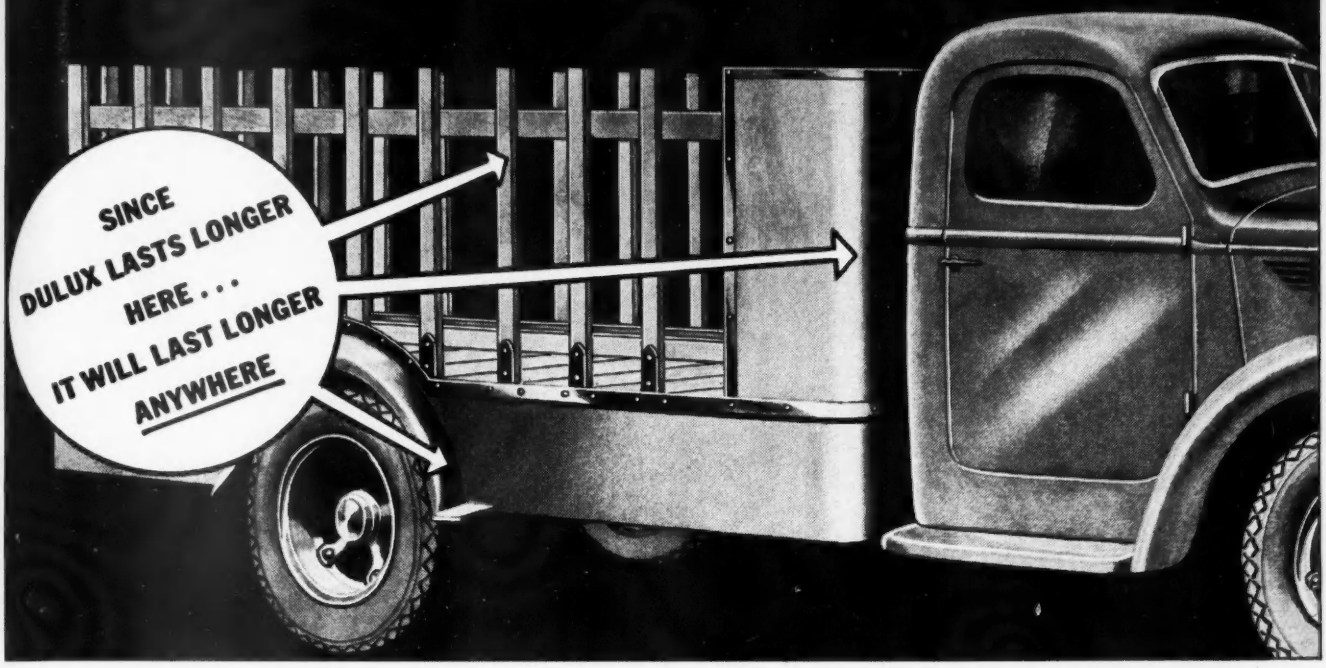
THE "HARDWEAR POINTS" PROVE IT



TAKE A LOOK at the "Hardwear Points" on *your* fleet. Is the finish giving you the service you expected? If not, you'll want to know about Automotive DULUX.

DULUX is an unusually tough and durable finish—even at the "Hardwear Points." And, if DULUX stands up here, it will stand up *anywhere!* Sparkling from the very start, it *keeps* its brilliant lustre; retains its color; is easy to clean and keep clean; and gives extra service for months on end.

But more than that, DULUX will cut down on your paint maintenance costs . . . make repaintings fewer and farther between . . . and save you *plenty* in the long run. Besides, a gleaming DULUX finish will make every one of your trucks a handsome advertisement for your business, and build good will for *you.*

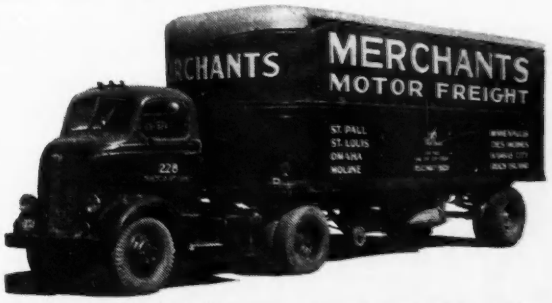
It will pay you to find out about this money-saving, long-lasting, "hardwear" finish. Just write to E. I. du Pont de Nemours & Co., Inc., Finishes Division, Refinish Sales, Wilmington, Delaware.

Visit the Du Pont "Wonder World of Chemistry" exhibits at the New York World's Fair and the Golden Gate International Exposition

• The stakes on a commercial body . . . and edges of body and fenders . . . are no places for a finish that can't take it! Constantly exposed to the rigors of the weather, traffic fumes and swirling dust and dirt, they receive lots of abuse. That's why—if you want to save money on paint—you can't afford *not* to use a durable finish on these "Hardwear Points."

WHERE DULUX IS SAVING DOLLARS: MERCHANTS MOTOR FREIGHT

This well-known middle-western fleet, operating 1832 miles of daily service, demands a durable finish to stand up under the hard wear and rigorous weather to which it's constantly subjected. That's why Merchants Motor Freight uses Automotive DULUX exclusively.



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GIVES MORE MONTHS TO THE GALLON

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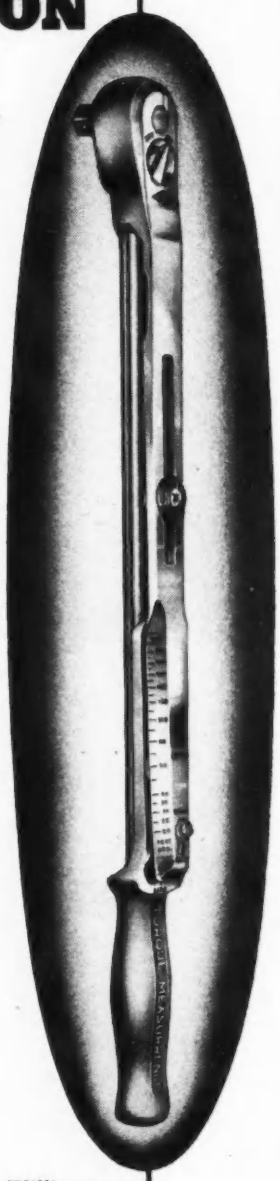
with WILLIAMS' NEW TORQUE REVERSIBLE RATCHET "MEASURRENCH" S-57



As practical as it is ingenious . . . this new, Reversible Ratchet takes the guesswork out of tightening nuts, bolts and studs where precise, or equal tension is a "must." Easily read scale shows tightening pressure from 20 to 200 foot-pounds — warning signal for any desired pressure from 35 foot-pounds up; sounds when pressure coincides with that of previously set, movable indicator. No delicate gears, levers or dials; accuracy is assured by rugged sections of high tensile steel. Measures right hand torque, but wrench action is reversible for left hand turning. Fits Williams' standard "Supersockets" and all others with ½" square drive. KNOW your *tension* with Williams S-57!

Write for literature of the complete Williams line including all types of wrenches, pliers, screw drivers, chisels and punches.

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CHILTON COMPANY

Chestnut and 56th Streets

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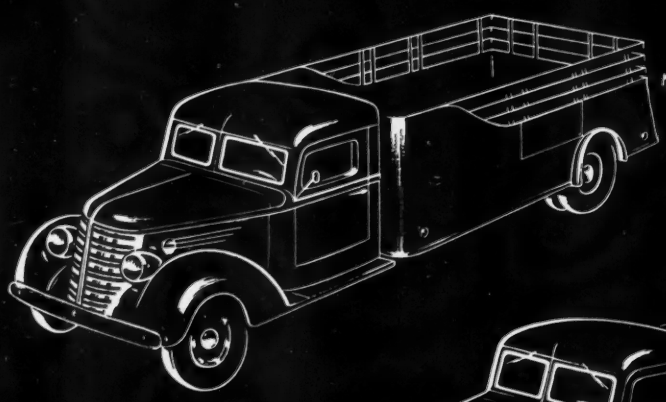
1½ to 5½-Ton Capacities



Medium Duty Models
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Capacities

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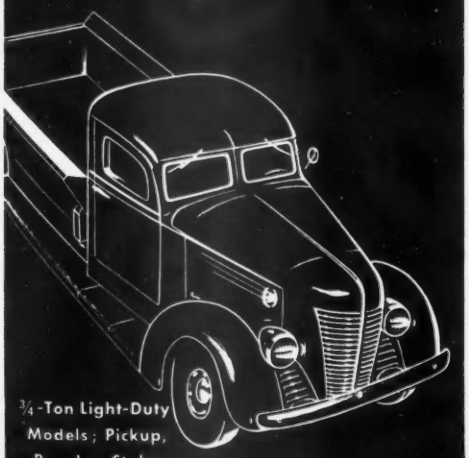

¾-Ton Light-Duty
Models; Pickup,
Panel or Stake

NO MATTER what your trucking requirements may be —whether you serve milk routes, operate a fleet of package delivery units, contract for heavy excavation or use super-heavy-duty tractors for hauling across the continent—Federal builds a truck specifically designed for *your* purpose.

For 29 years the Federal Motor Truck Company has specialized exclusively in designing and building trucks. Its high reputation has been made not only through the dependability of its products, but through accurately fitting the truck to the job—providing a line of models broad enough to cover every trucking requirement with a vehicle designed to do each job most economically and efficiently.

Federal makes 37 different models from ¾-ton to 8-ton capacity; all with a modern beauty in keeping with the chassis specifications, all with the plus value which comes from unusual dependability, low operating cost, low maintenance cost and long life. Whatever your trucking needs may be, have the Federal dealer show you the *Federal* designed for *your* purpose before you buy *any* truck.

$595 up
Standard Chassis
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CAPACITIES ¾—8-TON

FEDERAL TRUCKS

FEDERAL MOTOR TRUCK COMPANY • DETROIT, MICHIGAN
Leaders in Commercial Transportation for 29 years

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ANTHONY "OK" Hydraulic *Low Loading Height Hoists*

Carry these heavy loads lower. Greater stability. Saves the driver—Saves the truck. Cap. 5 to 30 tons.

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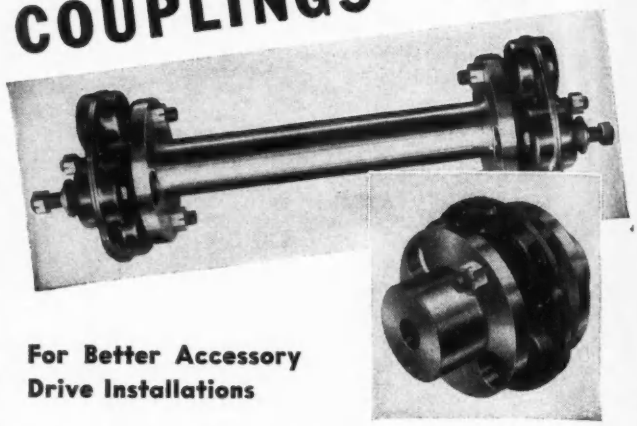

For Better Accessory Drive Installations

Morse Morflex Couplings transmit power without noise, and dampen vibration. Morse Morflex Universal Drive Shafts provide a successful cushion drive in a shaft coupling, driving units of remote or angular location. No lubrication needed. Made by the makers of Morse Silent Timing Chains. Write for details.

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Get the Accurate Mileage Records that Help Cut Trucking Costs

Veeder-Root Hub Odometers give you accurate records of every mile your trucks move, backward and forward. And these records enable you to find:

1. Exact operating cost per truck per mile.
2. Exact cost of fuel and equipment.
3. Any carelessness of drivers.
4. Shortest, cheapest routes.

These 4 pointers will show you every possible chance to save. So put tamper-sealed, dirt-proof Hub Odometers on all your trucks . . . and cut your costs to bedrock.

Write for Free Bulletin
VEEDER-ROOT Incorporated
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HUB ODOMETERS

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For effective demonstrations of new 1939 models, install the new VAPO-DOM fuel line gas control. Prospective buyers will appreciate the quicker and smoother acceleration at all motor speeds without hesitation or "bucking."

- **Controls the Gaseous Fuel**
- **Maintains Fuel Pump Pressure**
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INSIST ON BOLSER. SEE YOUR JOBBER!

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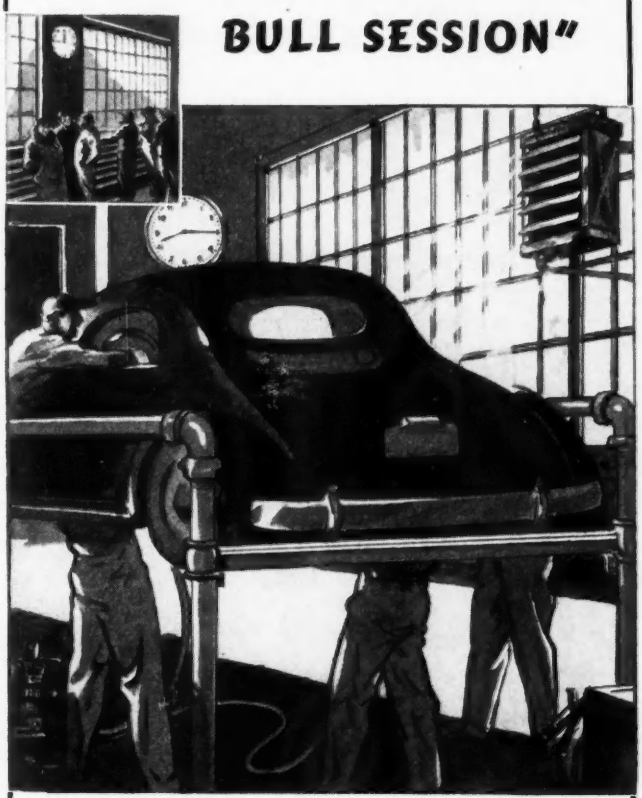
END
THE "COLD MORNING
BULL SESSION"



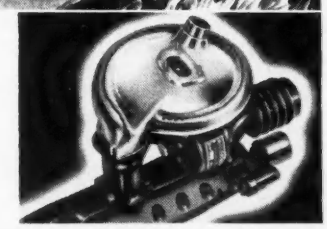
When the shop gang huddles 'round the radiator, waiting for a sluggish heating system to take the frost out of the air, the party's on you. But you can't blame *them* – a Thermolier would get action at once, by blowing comfortable warmth *right where they work* – down to the floor . . . even into the grease-pits. And a Thermolier will do it *better* than any other unit heater!

For Grinnell Thermolier is the *only* unit heater with the Internal Cooling Leg, that keeps draining off condensate, to keep *all* of the heater working *all* of the time . . . with every tube an expansion bend . . . with positively leak-proof tube-to-header construction . . . with easiest erection . . . and ten other Points of Superiority that mean the *most* for your money!

Get the facts. Write for the 48-page Thermolier Book today. Grinnell Company, Inc., Executive Offices, Providence, R. I. Branches offices in principal cities.

GRINNELL THERMOLIER
THE UNIT HEATER WITH 14 POINTS OF SUPERIORITY

WIN GREATER PAYLOADS with Plus PERFORMANCE



First and second place honors went to supercharged cars at the last 500 mile classic. In fact seven out of the ten prize winners were supercharged—the secret of winning performance, power and endurance.

SUPERCHARGER

For Ford V-8 trucks steps up power 38%, increases torque and gas mileage. Overcomes power loss at high altitudes. For greater profits from your present Fords, equip with McCulloch Superchargers.

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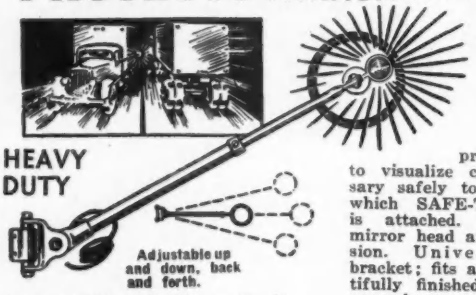

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Illuminated head instantly and instinctively enables approaching drivers to visualize clearance necessary safely to pass truck to which SAFE-T-LITE mirror is attached. Oversized 6" mirror head affords broad vision. Universal mounting bracket; fits all trucks. Beautifully finished in aluminized enamel—guaranteed rust- and dust-proof.

Extra rigidity eliminates vibration. Write for interesting details.

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The addition of the Schofield Dieselizer to any gasoline engine permits the use of cheaper fuels and results in a saving of from 40 to 70%. No changes are made in motor structure, ignition or operation. The Schofield Dieselizer has been thoroughly tested and proved efficient during the past two years. Send for full information.

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2. "Tire and Tool Pack" Dump Bodies—a spacious weather and theft-proof compartment built-in under body.
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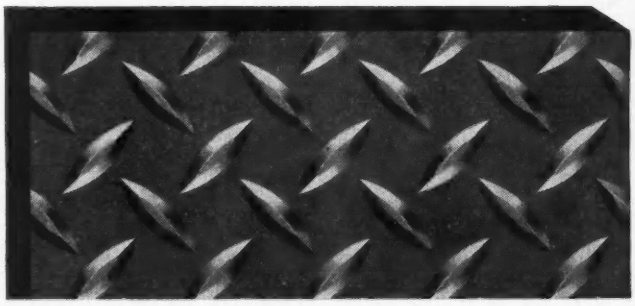

"A.W." Super-Diamond Pattern . . . Diamonds half actual length

"A.W." *Rolled Steel* **FLOOR PLATE** Safe in any weather. Crack-proof, heat-proof, oil-proof. No maintenance expense. Booklet on request.

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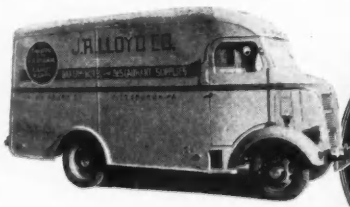

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SUPERIOR CONSTRUCTION
GREATER STRENGTH
LIGHTER WEIGHT
LONGER LIFE
BETTER APPEARANCE

Consult with "The Body Builders for the Nation" regarding bodies to fit any requirements — YOUR requirements. Quotations cheerfully given without obligation.

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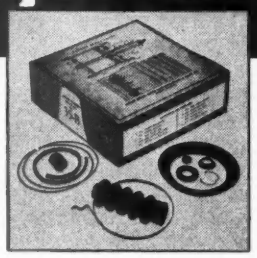
Every Fleet Owner Should Have This Repair Kit!



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Ten inexpensive kits containing all of the wearing parts needed for completely rebuilding all popular types of B-K Units. All parts in every kit guaranteed as to size as well as quality. Makes reconditioning safe and sure. Write for Catalog 16-A, covering complete line of power brake parts and fittings.

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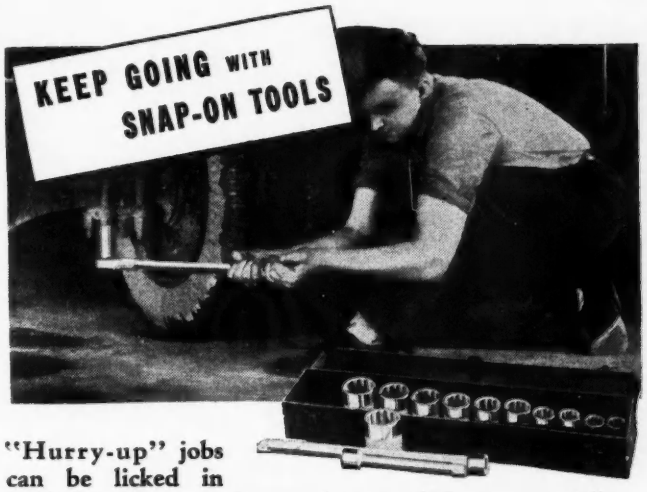

"Hurry-up" jobs can be licked in half the time—regular service speeded up materially—with this Snap-on Heavy Duty Wrench set that gives you just the tools you want for big, "tough" nuts—*all* the tools you need for nuts from 1 1/16" to 1⅞".

Set contains 10, rugged, double broached Loxockets; Ratchet, Sliding Tee and offset Handle and 2 Extension Bars.

See your Snap-on salesman or write for full particulars.

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Snap-on Socket Wrenches — The Choice of Better Mechanics — Blue-Point Mechanic Tools

You ought to have one of these IMPERIAL WELDING OUTFITS!

• Fleet owners are rapidly discovering that they can't get along without an Imperial Welding Outfit. With one of these outfits it is a simple matter to handle repairs that can't be handled except by welding . . . fender and body repairs, work on frames, water jackets, cylinder blocks, engine supports, bumper brackets and all kinds of odd jobs.

Many fleet owners have also found it pays to throw out antiquated welding methods. Their results are so much better with the new up-to-the-minute Imperial outfits that it becomes very costly to go on using an outfit that doesn't measure up to present day standards.

You will be interested in getting all the facts about Imperial aids for your service and repair work. Write for Catalog No. 121. It not only covers the latest information on Imperial welding outfits, but also data on brass fittings, flexible fuel lines, tubing service tools, battery testers, freezetesters, etc. Write for your copy.

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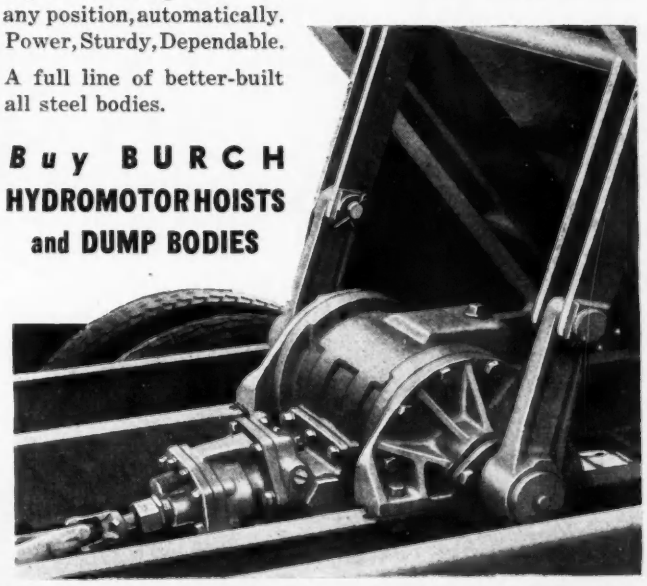
Just One Moving Part No Oil Lines—That's BURCH!

Balanced power for raising or lowering—locks in any position, automatically. Power, Sturdy, Dependable.

A full line of better-built all steel bodies.

Buy BURCH HYDROMOTOR HOISTS and DUMP BODIES



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Here you speak directly to the men to whom you want to speak—*and you do not have to pay to talk to anyone else.* That gives you the lowest rate in the automotive field—$160 per page in MOTOR AGE or AUTOMOBILE TRADE JOURNAL, and MOTOR WORLD WHOLESALE absolutely free.

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Spicer

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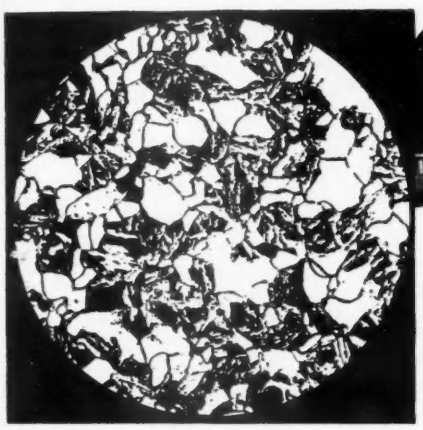
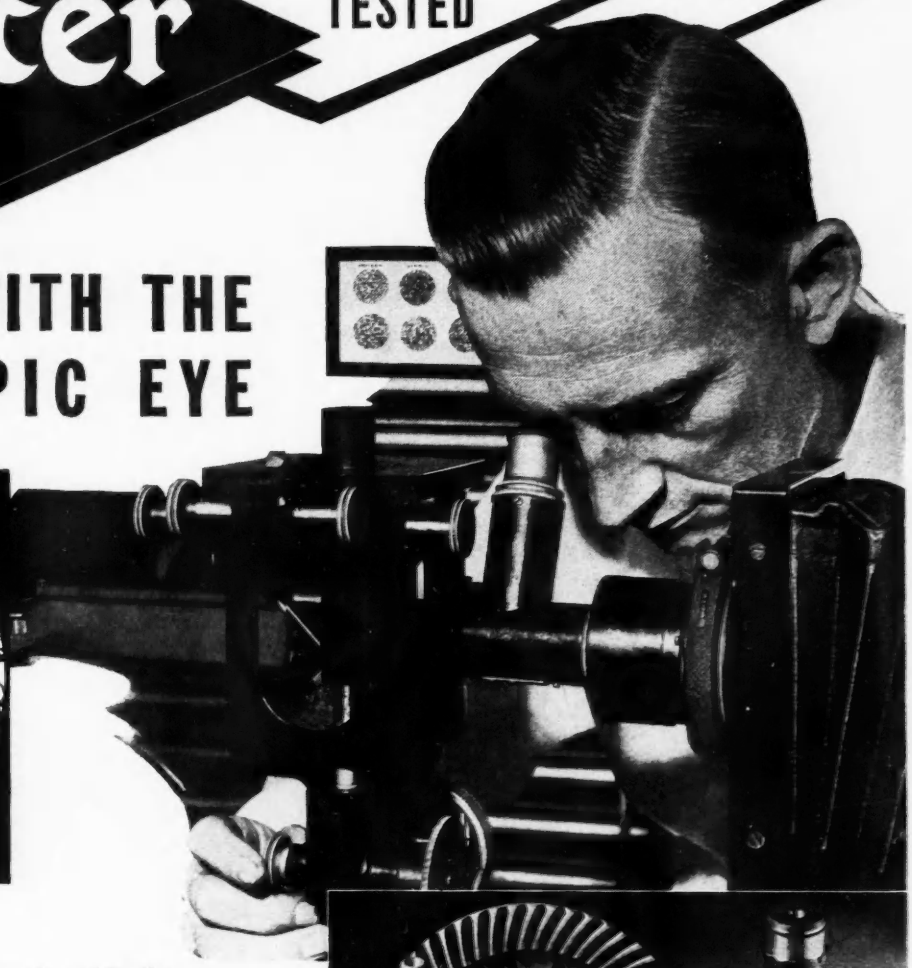
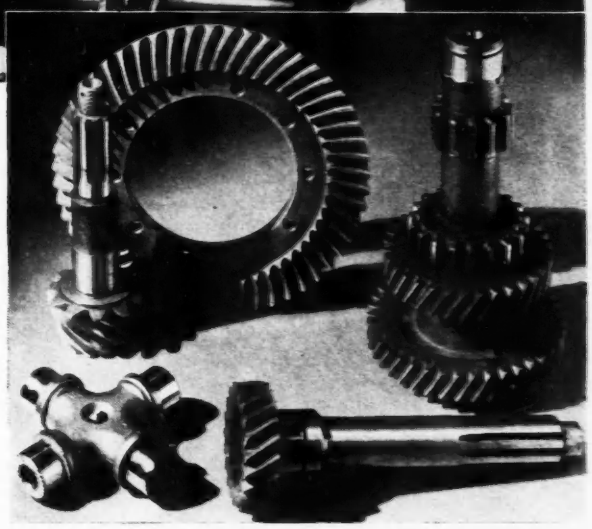




● For 36 years, **Spicer** has designed and built power transmission equipment for the most severe usage — checked performance closely — constantly improved for better service. Still, all this falls short of the **Spicer** conception of guaranteed service to you. So **Spicer** conducts endless laboratory tests to get definite proof in advance that each part produced will be equipped for peak performance.

Spicer subjects steels to microscopic examination revealing structural qualities, minute flaws, cleanliness, etc. If it meets the rigid demands of **Spicer** it is processed to its maximum physical properties.

That's how **Spicer** quality goes all the way through each part. It's one of the many important reasons why you can buy **Spicer** equipment with implicit confidence in its superior performance and service.



A few of the parts in the broad, quality line of ***Spicer*** *power transmission equipment.*

Spicer Manufacturing Corporation • Toledo, Ohio

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CLUTCHES and TRANSMISSIONS	FRONT and REAR AXLES	UNIVERSAL JOINTS	FRAMES READING, PA.

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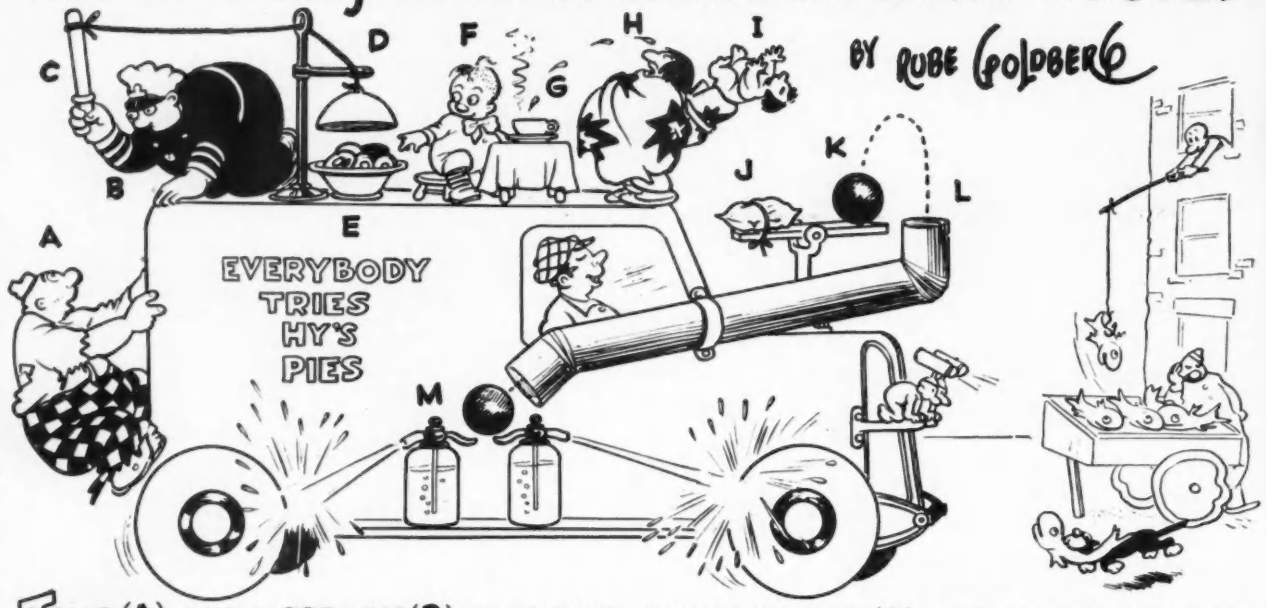

TRAMP (A) STEALS RIDE ~ COP (B) TAKES SWING AT HIM WITH CLUB (C), CAUSING STRING TO LIFT LID (D) OFF BOWL OF DOUGHNUTS (E) ~ BOY (F) TAKES DOUGHNUT AND DUNKS IT IN COFFEE (G) ~ HOT COFFEE SPLASHES IN EYE OF INDIAN SQUAW (H), CAUSING HER TO LOSE BALANCE AND DROP PAPOOSE (I) ~ PAPOOSE FALLS ON PILLOW (J), TOSSING CANNON BALL (K) INTO STOVEPIPE (L) ~ BALL ROLLS THROUGH PIPE, HITTING HANDLES ON SYPHONS (M), SQUIRTING SELTZER ON TIRES, COOLING THEM QUICKLY! P.S. DON'T WORRY— PAPOOSE LANDS SOFTLY AND IS NOT HURT.

BUT HERE'S a PRACTICAL invention!

See How New Goodrich Silvertown Truck Tire Protects Against Hot-Weather Blow-Outs

• It was the biggest load we ever heard of—101 tons! Altogether, including truck and trailer, 135 tons of dead weight ready to break the backs of the tires. You need more than a Rube Goldberg invention to keep tires cool on a job like this. But they didn't have any trouble. Moving a gigantic transformer is just part of the day's work for this operator of 215 trucks.

We hear plenty of such stories of extra-heavy loads, of tire-burning speed runs. And the reports show that on many of the toughest hauls on record, where tires had been blowing out prematurely, Goodrich Silvertowns ran two and even three times longer than the best rubber used before!

GET EXTRA MILEAGE

Yes... there's plenty of proof that the amazing cord invention built into these new Goodrich Silvertowns holds heat in check. Licks 4 out of every 5 premature failures! Adds thousands of miles to the life of the tires!

If your trucks carry heavy loads or highball over the highways, you'll be surprised at the huge year-round savings of these cooler-running tires. But maybe yours is just an average operation. Then remember: during hot weather "blow-out" heat builds up faster than ever in truck tires. You need Goodrich Silvertowns—right now!

And why do these tires run cool? Because of Hi-Flex Cord, a new type, compact cord which is stronger and more elastic. It retains its strength and its elasticity throughout the life of the tire. Because it is more compact, it is possible to build a less bulky tire—a cooler-running tire.

SEE THE GOODRICH MAN

Ask the Goodrich dealer to show you the remarkable demonstration of Hi-Flex Cord. He will be glad to give you, also, a dollars-and-cents estimate of how much Goodrich Silvertowns will save you . . . There's no extra cost for Hi-Flex Cord and the other features of Triple Protection.

READ WHAT TRUCKERS SAY

VIRGINIA—"Our truck tire costs have been reduced at least 50%. We attribute this fact to the construction of your tire, which seems to resist heat."

MISSOURI—"I put 10 Goodrich Silvertowns on one of my rigs. The four I put on the drive wheels were taken off at 87,452 miles and put on the trailer and are still in good condition."

ALABAMA—"... This set of tires ran us between 70,000 and 80,000 miles. We attribute the extra long mileage to your new type cord which permits the tires to run cool." *(names on request)*

Goodrich Triple Protected Silvertowns

SPECIFY THESE NEW SILVERTOWN TIRES FOR TRUCKS AND BUSES

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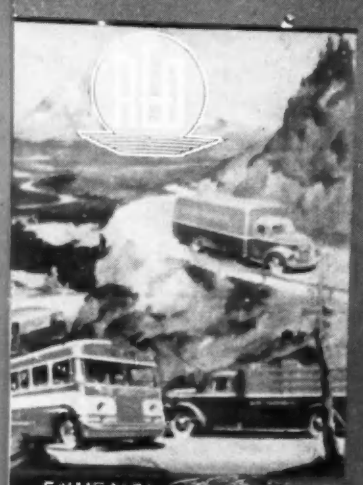

REO

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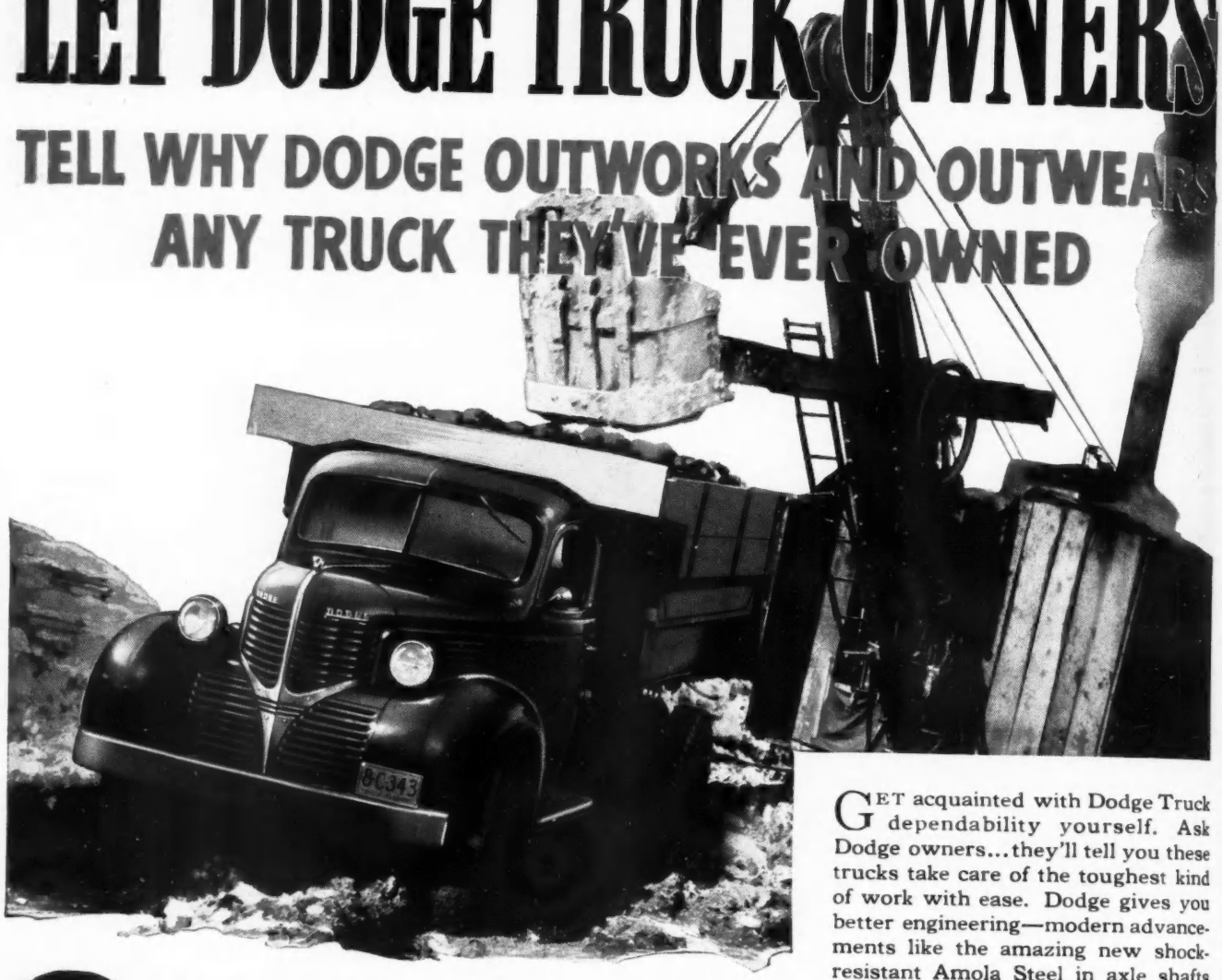
TELL WHY DODGE OUTWORKS AND OUTWEARS ANY TRUCK THEY'VE EVER OWNED



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"SOME TIME AGO we purchased a 1½-ton Heavy-Duty Dodge Truck, which is in constant use. We find that Dodge gives us the most dependable and satisfactory service from a standpoint of maintenance and appearance, of any truck we could buy."—L. H. Armstrong, Armstrong Hardware Co., Knoxville, Tenn.

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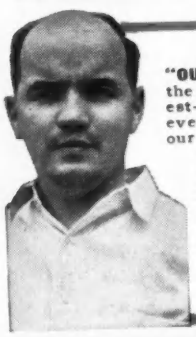

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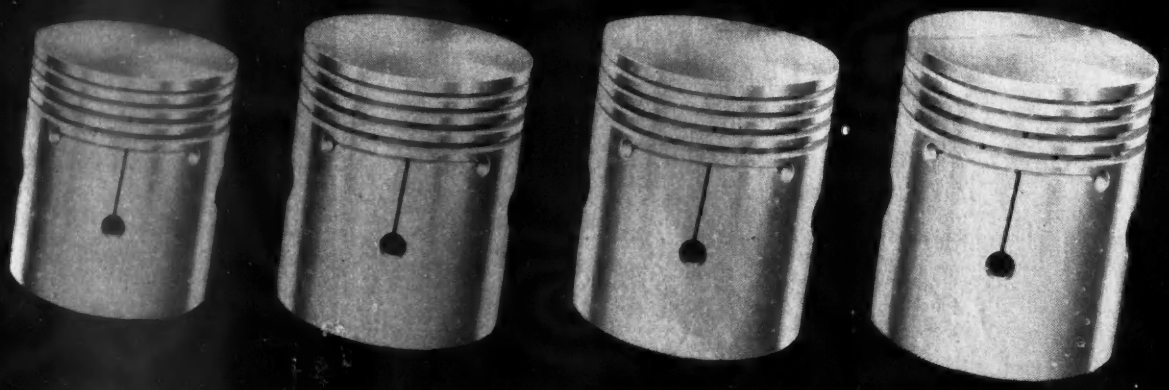

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*H. M. Jacklin, Professor of Automotive Engineering, Purdue University — "Study of Safe Possibilities of Road Vechicles."

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